THE MAKING OF A TELEVISION DRAMA SERIES

DOCTOR WHO

THE ARMAGEDDON FACTOR

UK: £2(rec) US: $4.50 Canada: $5.95

ISSUE 37

THE ARMAGEDDON FACTOR
Serial 5F
Episodes 500-505
Season 16
Story 103

THE ARMAGEDDON FACTOR was the last story of the sixteenth season of **Doctor Who**. As with the three previous seasons, the final story was a six (rather than four) parter.

After the near disasters of the final story of the previous season (THE INVASION OF TIME), producer Graham Williams can be forgiven for expecting an easier conclusion to the Key to Time season. Instead he had to contend with a story initially titled ARMAGEDDON.

In the course of the story's transition from plot outline to screen, no fewer than five writers gave creative input - including Graham Williams himself, although compared with THE INVASION OF TIME, his contributions were relatively minor.

Williams had other things on his mind as well. He needed a new script editor to replace Anthony Read, a new leading lady to replace Mary Tamm, a new voice for K-9 to replace John Leeson, and he needed to cope with yet more industrial action at the BBC and with "the aggrievous Mr Baker." Overall it was not the smooth wind-down to his second year on **Who** that Williams had wanted or expected.

The work on the ***SCRIPT*** started well. In contrast to THE INVASION OF TIME, work on ARMAGEDDON started almost nine months ahead of the production with a tender to Bob Baker and Dave Martin to write the conclusion to the Key to Time story. There was a general belief that the Bristol Boys were reliable stalwarts who always delivered goods up to spec and on time.

Although the basis of the Key to Time running theme was already established as early as November 1977, enabling all prospective writers to receive a copy of Graham Williams' rationale about the cube's function and the Guardians (see next issue), the final ending of the story had not been determined. Baker and Martin were invited to contribute their own ideas as to how the theme should be brought to a conclusion. The only restriction was that it should not continue into season seventeen. The

Characters

The Marshal

"I understand only my duty. And my duty, as Marshal of Atrios, is to prosecute this war to a successful conclusion."

Under the control of the Shadow, with whom he communicates via a skull behind a two-way mirror, the Marshal has brought the people of Atrios to their knees in the fight against the twin planet of Zeos. He is unable to realise the whole war has been staged because of the Key to Time.

He refers to the Atrians as "my people" - much to the disgust of the Princess Astra - and spouts pure propaganda to them. He promises them victory - even though he knows, and confides in Shapp, that they are losing.

The Shadow orders the Marshal to use the Doctor as the architect of the Atrians' victory. To the Doctor there can be only one answer - peace. But the Marshal cannot comprehend this: "how can we have peace until we have the ultimate deterrent that will ensure a lasting peace?" He readily admits he would use such a force - to make sure it worked. "You have the true military mind," the Doctor tells him ironically. The Marshal takes this as a great compliment.

All that matters to the Marshal is "death before dishonour" and "victory before death." When the Shadow tells him the war is over, having served its purpose, the Marshal sees merely a chance to smash Zeos. He even refuses to abort his final assault when Shapp warns him of the armageddon factor - total obliteration - which will be brought into play if he presses home the attack.

The blood-thirsty Marshal is deprived of his battle glory, though. The Doctor sets up a forcefield around Zeos, causing the Marshal's missiles to destroy the Shadow's lair instead of Zeos.

Major Shapp

"Perhaps we should try to capture it, Sir?"

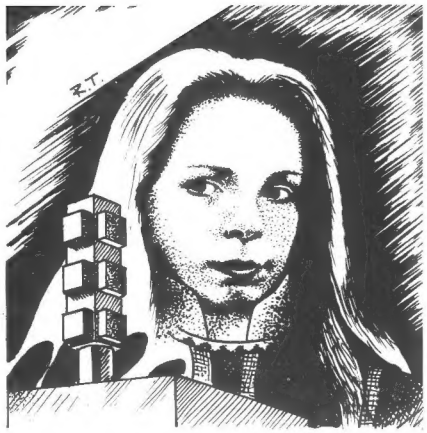
The Marshal's sidekick seems to have been driven to boredom by the interminable war against the Zeons. He sarcastically accepts the Marshal's commands, giving out attack orders with a complete lack of enthusiasm. Unlike his superior, he is not totally bent on destruction. He suggests capturing the unidentified craft (in fact the TARDIS) whereas the Marshal orders its destruction - convinced, without any proof, that it is a weapon.

The Marshal later describes Major Shapp as a "useless bureaucrat," which suggests that Shapp may have risen quickly to his position from a very different walk of life - perhaps because of the heavy losses sustained by the Atrian forces.

Shapp's apparent regret, near the beginning, at not being able to "soften-up" the Doctor, Romana and Merak does not ring true - the casual way he corrects the Marshal when the Atrian fleet is being picked off one by one also indicates his lack of interest in matters military.

But what could have been an interesting twinning of characters (military against non-military with both supposedly-military) is not utilised, and Shapp quickly degenerates into nothing more than a comic foil for everybody and everything else. Witness, for example, his attempt to destroy Mentalis, and his pratfall reaction to being shot by a Mute.

Princess Astra



The ultimate pawn in the game of life, Princess Astra is the most important character of all. When we first see her she is being used by the Marshal to uphold the Atrians' morale. After being kidnapped by the Shadow's servants, she is then used in a propaganda broadcast, telling her fellow Atrians to give in. Underlying all this, though, is her destiny as the sixth segment of the Key to Time.

Astra is the sole surviving member of the line of the royal house of Atrios. She becomes increasingly aware that she is to play a major role in the cosmic order of things.

Under the influence of the Shadow she is used to lure the Doctor to the Shadow's base.

While free of the Shadow's power, and knowing that he has gained possession of the first five segments of the Key to Time, she changes into the sixth piece in his lair. It is only the Doctor's timely intervention (smuggled in miniaturised by K-9) that prevents the Shadow from being able to hand over the Key to the Black Guardian. But this does not mean she wants the Black Guardian to have the Key - the time of her transmutation is out of her hands.

"I am the sixth princess of the sixth dynasty of the sixth royal house of Atrios."

Although she was born to be the sixth segment, Astra was not destined to remain so - a fact which helps the Doctor realise that the entity which appears on the TARDIS scanner and demands the complete key is not the White Guardian but his evil opposite. The Doctor knows that the White Guardian would have returned Astra to her corporeal state once the balance between Good and Evil had been restored. The Black Guardian, masquerading as the White, would keep her imprisoned as the sixth segment.

True enough, a freed Astra is reunited with her beloved Merak after the segments of the Key are scattered again.

Merak

Princess Astra's lover is not afraid to let people know of his feelings for her. Throughout the story she is his only concern. At one stage, after Romana reveals it will help find Astra, he snatches the Tracer from her and makes off with it in the transmat.

His joy at their reunion is marred when he finds Astra is under the Shadow's influenc. But this makes him more determined than ever to save her.

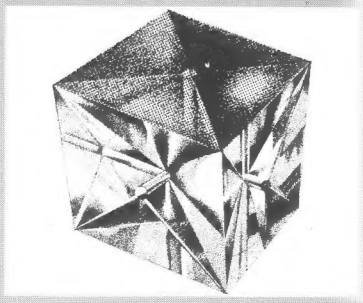
It comes as no surprise that a surgeon, whose job involves saving lives, is opposed to the war with Zeos. It is to his credit that he is willing to put his life in danger and be branded a traitor if it helps achieve peace.

Through Merak we learn exactly how Astra is connected with the sixth segment. Her medical records reveal "a molecular anomaly buried in the genetic structure of the royal house of Atrios, and passed from one generation to the next, until finally - Astra." Merak tells Shapp: "I imagine it means that her every living cell is part of this Key to Time, and that to save us Astra must be destroyed."

"Astra and I were trying to make contact with the Zeons - to try to make peace."

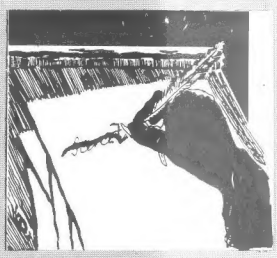
But when Astra does transmute and become the sixth segment, Merak refuses to believe what he has seen and stays on the Shadow's planet to look for her. His search is of course fruitless and he is rescued by Drax and K-9.

After the Doctor snaps the Tracer, and the six segments are scattered once more through space and time, Merak is finally reunited with an un-possessed Astra - much to his joy. True love, it seems, really did conquer all.



IN-VISION *Armageddon supplement* in the centre of this issue reproduces Baker and Martin's original storyline submission and traces its progress from paper to screen.

By the time the scripts came in, Read was heavily into the problems posed by THE PIRATE PLANET and so could give little time to ARMAGEDDON. Baker and Martin in the meantime took on commissions to write episodes to ATV's **Scorpion Tales** (an episode called THE KILLING) and the Graham Williams-devised and Philip Hinchcliffe-produced **Target** (ROGUE'S GALLERY).



SCRIPT EDITING of the story did not begin in earnest until late August 1978. By this time Baker and Martin had decided to end their eight-year writing partnership and work independently. This presented Anthony Read with a problem. Work was needed on the scripts - mostly to edit them for timing reasons (see the **IN-VISION** *Armageddon supplement* in the centre of this issue for an account, and for Bob Baker's comments).

The rework of ARMAGEDDON was virtually Anthony Read's last act as script-editor of **Doctor Who**. He had endured a strenuous and often punishing eighteen months on the series and felt in need of a rest and the opportunity to write a book - something he had always wanted to do. Although he confessed to enjoying the challenge of the series and was proud of his contribution to the **Who** legend, he was adamant in refusing both Graham Williams' and Graeme McDonald's pleas to renew his contract.

He did however suggest Douglas Adams as his successor. Despite the scripting problems on THE PIRATE PLANET, Read felt that Adams was a tremendous new force in the writing arena with a flair for lateral thinking and a genius for using words.

Graham Williams' preferred choice was still Robert Holmes, but he declined the offer of his old job back. So Williams agreed to Read's recommendation and in mid-October Douglas Adams came in as trailing script editor, so that he could take over fully when Read's contract

expired at the end of November.

As seen from McDonald's memo, Williams had already signed up ***DIRECTOR*** Michael Hayes for the story. Prior to this Williams had picked or approved the other senior posts on this story. He close Michael Hayes as director, a friend and colleague of his from their days together on Angels. Hayes was a respected Director at the BBC with a flair for attracting high calibre casts. Sure enough he was able to procure for ARMAGEDDON the talents of celebrated film actor John Woodvine, character actor Barry Jackson, voice artist William Squire, and one-time **Duchess of Duke Street** co-star Lalla (Sarah) Ward. Also, when a need arose late in the day to cast the Black Guardian, Hayes (appropriately enough) managed to hire radio's own infamous Man in Black, Valentine Dyall.

In all cases the artists agreed to take part on the strength of the roles as written in the scripts. John Woodvine recalls liking-the suggestion that the Marshal should visually look like Tito - "stocky about fifty with plenty of medal ribbon on his uniform." The script also suggested he should play the role in "...true bulldog manner; Churchillian in speech and Napoleonic in gloom".

Drax was a difficult character to cast. Baker and Martin had envisaged him originally as a white-haired, white-bearded eccentric, reminiscent of the *Count of Monte Cristo*'s cell-mate; a renegade Time Lord inventor imprisoned by the Shadow. Read and Williams, however, thought it would be more fun to make Drax a cross between spiv hussler and a South-London car dealer; in other words, the series' first proletarian Time Lord.

Accordingly, Baker and Martin wrote this description of him in the script for part five: "A stocky little man, portly even, with a touch of swagger about him like a South London prize fighter or a car dealer. Drax uses his hands a lot to express himself. A confident air of the born mechanic and hussler. Drax dusts himself down and sticks out his blunt mechanic's hand..." The

The Shadow

Like a spider at the centre of his web, the Shadow patiently waits, trapping others and using them so that he can have the Key to Time for his master - the Black Guardian.

To the Shadow it is a lot easier to find the sixth segment and let the Doctor and Romana do the donkey-work in collecting the other five which they will then bring to him.

The Shadow tells the Doctor: "I have been waiting for you. I, too, serve a Guardian. A Guardian equal and opposite in power to the one who sent you. The Black Guardian. He walks in darkness, and you are in the valley of the Shadow."

After the Marshal launches his final attack on Zeos, the Doctor uses the first five segments of the Key, plus a substitute sixth, to generate a somewhat shakey time loop which gives him more time to outwit the Shadow. The Shadow sees this and captures Romana to trade her for the first five segments of the Key. The Doctor points out that millions of lives will be lost if the Shadow lifts the time loop, as the Marshal will be able to carry out his attack. But the Shadow sees nothing wrong with genocide: "That has always been our intention. This pathetic war is but a rehearsal for our grand design."

Drax unwittingly helps the Shadow get

"Once we have the Key to Time we shall set not two planets, but two halves of the entire cosmos at war, and their mutual destruction will be music in our ears. Unlike others, it is not power we seek, but destruction that we glory in."

the first five segments by miniaturising the Doctor rather than his Mute guard while the TARDIS door is open. The Shadow seizes on this mistake and goes to collect the assembled segments. "When the Key is mine, I shall dispel the light, and darkness and night shall reign," he vows.

Ironically, it is darkness through light which is the Shadow's downfall. The Doctor uses light from the Key to Time to blind his adversary. The Time Lord, his assistant, K-9, Drax and Merak are then able to escape with all six segments of the Key to Time - leaving the Shadow to his demise at the hands of his master, the Black Guardian.

Drax

The appearance of this crafty Cockney Gallifreyan does much to brighten up proceedings in the doom-laden tale. One of the Doctor's classmates from his Tech course some 450 years earlier, Drax failed and went into repair and maintenance - "Do anything, anytime, anywhere" - travelling all over the galaxy, buying up, doing up, then selling assorted pieces of technology. His dealings include cybernetics, guidance systems, and, he has to admit, armaments - but "not on a regular basis, of course."

Drax's mechanical skills were employed by the Shadow to build the Mentalis war computer on Zeos, which masterminds every aspect of the conflict with Atrios.

Drax tells the Doctor that he built Mentalis "under duress," but it transpires that he knew he was being used to lure the seeker of the sixth segment. That said, he is genuinely upset that it turned out to be his old friend Theta Sigma, and Drax agrees to help defeat the forces of darkness. He helps the Doctor deactivate the armageddon factor programmed into Mentalis.

Drax acquired his "colourful" and "demotic" style of speech through an enforced

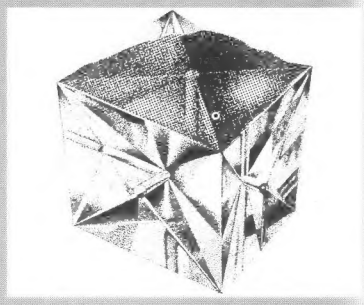
"Remember me to Gallifrey."

stay at Brixton Prison. His transport had broken down and he was "investigating certain possibilities with regard to replacements" when he was caught red-handed, and ended up with a ten-year sentence. He had to learn the "lingo" to survive the harsh environment of the penal institution.

Drax's Artful Dodger personality shines through to the end, and he sees a quick way to make a profit from the aftermath of the war. He does not doubt that he can strike a lucrative deal with the Marshal, reconstructing the war damage. When the enterprising Drax tells the Doctor and Romana it will be split 60/40, we are left in no doubt who will be the better off. □

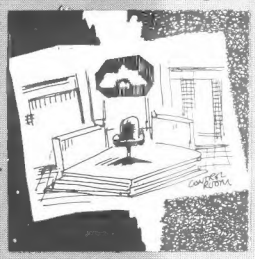
No way to treat a Lady

The first Romana, MARY TAMM, tells *IN-VISION* about her brief encounter with *Doctor Who* »



writers wrote this with actor Trevor Ray in mind - a more burly man than Barry Jackson.

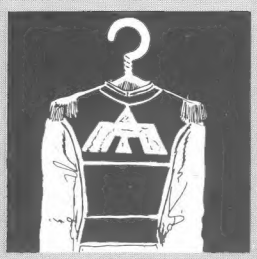
Lalla Ward had made a conscious decision to give up acting after ***Duke Street*** and had gone to France to study painting and drawing. But on her return to England in Autumn 1978 she was intrigued enough by the script for ARMAGEDDON to decide it would be fun to do. Having seen her in a tv film about the life of the poet Shelley, Hayes asked her to reprise that fey, somewhat etherial performance.



On the ***DESIGN*** side it looked for a time as if Raymond Cusick would land the task. However, still bitter about **Doctor Who** after his treatment by the BBC over the Daleks in the Sixties, Cusick declined, leaving the job open for his department head to appoint a newly graduated designer, Richard McManan-Smith. The biggest problem McManan-Smith faced was the lack of budget for the show. In many cases technical trickery would have to supply what money could not. Re-dressing solved some problems - the Zeon interrogation room was redressed for Mentalis. Similarly, the giant map in the Atrian war room was not complete, it was a simple blue-screen with a ChomaKey inlay of an illuminated grid map in a light box, on to which animated schematic sequences were superimposed. The graphics were by Charles McGee of the BBC Graphics Department.

The biggest compromise, however, was described in this way in the script: "Bent and twisting corridors with gargoyle monster faces in the rock; like an architectural equivalent of a twisted evil mind. There is something organic about it all: not entirely realistic. Weird, tortured shrieks and clanks, of course, abound."

What they wanted was Gothic. What they got was standard BBC caves sprayed with *wet-look* black paint. The concealed trapdoors and pits were impossible to realise in the studio, forcing Hayes to use rolling ChromaKey backgrounds to suggest falling, and artists on a turntable, reverse-zoom shot from high angles to simulate someone falling away into the darkness.



COSTUME designer was Michael Burdle, whose only previous **Doctor Who** had been COLONY IN SPACE seven years earlier. Most of the costume requirements were straightforward, although Burdle did pick up on the hint about dressing the Marshal in a Tito-like military tunic. He was also responsive to Graham Williams prompt that Mary Tamm should appear in something akin to her white gown from THE RIBOS OPERATION.

Some of the costuming was fairly straightforward - such as the ballpoint pens worn on cords round the neck as radios by the Atrians.

The Mutes were called "Mutes" (by Drax) because they were mutations. Burdle took this description further and designed face masks which covered their mouths.

More difficult, and requiring liaison was the costume for the Shadow. Ideally what the script called for was a walking, hooded skeleton, as the following introductory description shows: "The light in the room diminishes. Every time the Shadow appears this happens. He is evil, negative, Death, he who soaks up the light. We see him from the back, as always, moving to Astra, bending over as if to kiss her. She struggles. We see the Shadow's skeletal black hand reach out for her throat. Cut to close-up of Astra. She gasps in terror - then assumes an awful, mindless stare. The Shadow withdraws from her and we see he has implanted a small black device at her throat, like the one installed on the Marshal . . ."

With money so tight, an overly elaborate skeleton design was impossible, so Burdle and

MAKE-UP designer Ann Briggs settled for suggesting the Shadow's deathly countenance by attaching a skull-like crown appliance to William Squire's head and colouring the rest of him black to that little of him would be seen. Hopefully clever lighting effects would do the rest. Unfortunately this did not happen for several reasons.

TIME has not diminished Mary Tamm's grace and poise. Thirteen years after her somewhat abrupt departure from **Doctor Who**, she still retains that air of elegance and self-assuredness that made her, for Graham Williams, such a natural choice as Romana.

It was a productive partnership. Mary Tamm achieved nationwide, later worldwide, exposure as the Doctor's companion - an important reward at a time in her life when financial security mattered a lot. "I had just married," she recalls, "and like most newly-married couples, we faced all the worries of buying a home, paying a mortgage, and planning to raise and support a family. So to have a year's guaranteed steady work was a good source of security.

Undoubtedly, the series benefited in having an already-established actress to play a lead role, especially an actress who both took the role seriously and was intensely proactive in suggesting improvements for her character's appeal.

"I did get to design one of my own costumes for the show. Doreen James was the designer on THE ANDROIDS OF TARA. She and I got on like a house on fire once she knew what my tastes in clothes were. She'd originally designed a kind of brown trouser suit with a brown smock on top, suitable for horseriding. But unfortunately I have an aversion to wearing brown. It's not a colour I feel suits me, and I think it is important for an actor or an actress to feel comfortable in what they're wearing. I looked at the sketches and, frankly, I felt they were something a prisoner would wear.

"To me THE ANDROIDS OF TARA was a very romantic story - full of castles, knights in shining armour rescuing damsels in distress, and so on. So Doreen and I sat down together to work out something more fantasy-like. In the end, it was a joint effort. She designed the tunic, while I picked the colours. And it worked! I have had so many letters from so many people over the years about that costume. It's always a topic that comes up at conventions. I think they hope I've still got the pattern somewhere. I wish I had."

"People were staggered that I was taking on a sort of low-budget series"

Born in Bradford, Mary became interested in acting at a young age. She won a place at the Royal Academy of Dramatic Arts (RADA), where she learned, among other things, to lose her northern English accent. "They do force you to change your accent at RADA, but in a way they are right to do so. You find you become very limited in the roles offered to you if all you can do is talk in a northern voice. All you ever end up doing is northern parts. The RADA 'Standard English' accent is meant to give you a basis for speaking in any type of accent, thus broadening your own horizons. When I was at RADA, it was an eight-to-one ratio of men to women, so it was even more important for an actress never to do anything that might limit her in the roles she could play.

"Having said that, I was never really ambitious about what I wanted to do, except perhaps for wanting to work in the theatre in preference to film and television. I don't think I've ever planned anything about my career. I've just been happy that work has always been there, and that I've been lucky enough to work in some very diverse fields."

Few fields could be more diverse for a classically-trained actress than

accepting the role of a companion in **Doctor Who**. Mary Tamm remembers several of her friends and colleagues being aghast when she told them she had won the part. The considerations of financial security, however, were not the only reasons for taking the part.

"I did realise it was a gamble, but it was one I was prepared to take. People were staggered that I was taking on a sort of low-budget series that, at the time, was not highly-regarded as a classy drama. It was, after all, science fiction, and science fiction that didn't seem to have a vast amount of resources at its disposal.

"But I liked it, and took it on because I felt I could do something with the role that was being offered to me. My agent at the time was also handling the director of that first story, George Spenton-Foster, and so she knew better than all the other agents the type of actress the BBC were looking for. I discussed it with her and agreed it was a part I could play - and, I thought, play well.

"I had seen **Doctor Who** before so, initially, I said I wasn't interested in the part - precisely because I didn't want to end up screaming, falling over and twisting my ankle all the time. But my agent, and then later George Spenton-Foster, assured me this would not be the case: they were looking for a new type of companion, much more on a par with the Doctor himself. That was when I felt there was an opportunity here to do something that hadn't been done before."

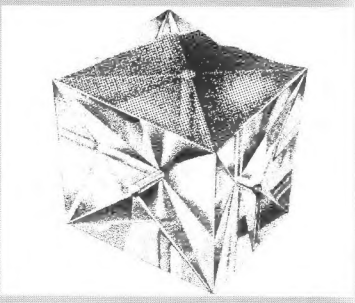
"I don't think you can deviate too much from being yourself in a television series"

The ideal that Graham Williams had in mind for Romana was Grace Kelly: an aloof but compassionate Time Lady whose graduate status would make her the Doctor's intellectual equal. But bluestocking graduates can be played any number of ways, from Grace Kelly to Joyce Grenfell. Mary Tamm took a more personal approach to creating the character.

"I don't think you can deviate too much from being yourself in a television series. If you do, it runs the risk of becoming phoney after a time. And on a show like **Doctor Who**, there really isn't the luxury of time to spend building up an eccentric or extravagant character. You just have to go into it without any pre-conceived ideas, not worrying about image, and get on with playing yourself to the best of your ability. I think the press coverage I got on **Doctor Who** was, by and large, quite generous - which I suppose rather vindicates my belief that you shouldn't worry in advance about any role you're going to play. Just be natural and be yourself.

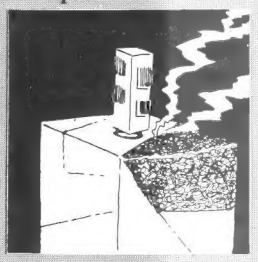
"To be fair, I do think I was very lucky in that my first costume, the one June Hudson created, was very much to my taste and fitted the image of Romana I had in my mind. I seem to remember going along to the first fitting, fearing the worst, and being very pleasantly surprised. It had a classical look to it that just felt right for the part."

The **Doctor Who** production treadmill proved arduous, but had its ups as well as its downs. Mary



Without spending a lot of time individually lighting each camera shot, it proved impossible for the lighting riggers to control the studio's overhead floods so that, as the Shadow walks along, the light round his vicinity dims accordingly. Lighting also had to be sufficiently bright for the rest of the sets and the actors to be seen, which in turn meant more of the Shadow was plainly visible than had been intended. Lastly, at Williams' behest, Hayes planned his camera angles so that the Shadow was more easily identified as the villain earlier than the end of episode four. So its shock climax, the ghoul being fully revealed, never happens as all of him has been seen well before the cliff-hanger.

Simpler make-up effects included providing blood for Merak's forehead after he has fallen down a tunnel of light into a pit.



Handling ***VISUAL EFFECTS*** was **Who** veteran John Horton, assisted by Jim Francis and Steve Lucas. With no money available to engage freelance prop makers, all the models and special props had to be designed and made in-house by Francis and Lucas. Working to John Horton's designs, Jim Francis concentrated mainly on the model work, leaving Steve Lucas free to handle requirements such as all the guns and radiation detectors, and the skull-like transceiver for the Shadow's messages on Atrios. He also made a new Tracer as the old one had been lost after the recording of THE POWER OF KROLL.

The Mentalis computer was a collaboration between Effects and Design. Design handled the main body of the pyramid; Effects provided the internal lighting and the latticework of reflective panels on the top of the device. Effects also took care of its destruction in the second recording block.

Another special prop required was a side panel for K-9 with a sliding door fitted into it. This side panel was shot separately on a ChromaKey backcloth. So too were the 'miniaturised' actors. All important was the masking and lining-up of both shots plus the live set featuring K-9. The sequence was controlled by

Dave Chapman at the Electronic Effects desk.

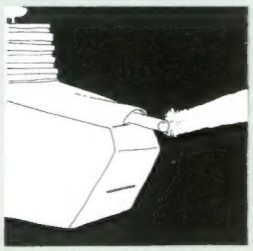
Model filming was all done on l6mm film at Ealing Film Studios. There was some obvious model work such as the TARDIS in space, the Atrios launch site, the Marshal's ship in space (some shots of which were later ChromaKeyed onto a starscape) and long shots of the planets and the Castle of Evil.

Other less obvious shots were also done, including lengthy zoom-in shots of a star field for later ChromaKey inlay to the view beyond the cockpit windows of the Marshal's ship. A short model sequence of the Marshal's ship's missiles being deployed ready for firing was also filmed. This was used in part four, and again (several times) in part six as part of the time loop.

Tom Baker had to be called in for one afternoon's filming. This was to do the K-9 conveyor belt sequences for episode two where, ultimately, he only appears in one shot.

One very important effect was the final dissolution of the Key to Time. A partially assembled cube, bound with fine thread, was suspended in mid-air from a ceiling wire attached to the sixth segment. Glitter was sprinkled onto the cube to make the filmed shot look more impressive. The camera was positioned looking at a mirror angled at 45-degrees between the camera and the prop. At the appropriate moment the binding threat was cut and the cube pieces filmed at high speed falling away, leaving only the sixth segment hanging there to suggest that it would soon be resuming the form of Princess Astra.

It was very important that the segments were not damaged. Both of Stephen Greenfield's expensive perspex keys were needed for the studio sessions - one fully assembled and bound with clear tape, and one with the sixth piece missing that could be fitted with the dummy segment.



Some live action effects were ***CUT*** in the final edit. These included a flying model spider/bat. This was shot on film, and was to have been ChromaKey inlaid during sequences in the Castle of Evil. The tunnels do still have

Tamm felt that the script quality varied, but that sometimes the presence of a good guest cast was adequate compensation for an occasional indistinguished script.

"I liked working very much with Susan Engel and Beatrix Lehmann, because they were both so good. That was about halfway through the series. Some of the scripts had given us problems, so maybe we were all getting a bit tired and jaded by then. But because you suddenly get two actresses of such wonderful calibre, it gave you a new enthusiasm and you were able to see the series in a whole new light. I remember THE STONES OF BLOOD particularly for just that reason: they made it better than it was, and better than they need have done.

"I think that was the crux of my feelings about **Doctor Who**, and why I finally decided I didn't want to do another year. The scripts were just too variable. The Douglas Adams story I enjoyed because Douglas is just so good with words, whereas THE ARMAGEDDON FACTOR I didn't enjoy because there was just too much going on - too many threads.

"That isn't just an attack on **Doctor Who**. A lot of writers are men, and I don't think most male writers are in tune with women. It's a very sweeping generalisation, but if you allow that most writers lead very insulated lives, because their job demands they spend so much time on their own, I don't think they tend to know a lot of women - or perhaps don't have that much experience of women. Certainly most of the male writers I've met don;t communicate very well with women, or they are not very confident around women. So how can they be expected to write for women if they don't really understand them?

"Because they are more receptive to communication, and don't worry so much about hiding feelings, women writers write better for women, obviously, but they also, generally, tend to write much better for men. I wish there had been more women writers on **Doctor Who**.

"Tom Baker used to rewrite his scripts regularly as a matter of course, but then I think all the directors were quite frightened of Tom and used to let him do what he wanted. Eventually, some of that rubbed off onto me and I joined in. I don't think I was ever as vitriolic in my objections as Tom was. With me, it was more about rewriting to feel comfortable with the way I would say lines, rather than wanting to raise issues with the plot, as Tom would do.

"I would have done another year on the show if the scripts (that is, my part) had improved. I thought Romana had started well, but towards the end she had just degenerated into the 'normal' little girl figure, tagging along behind the Doctor. There was no sign of matters improving, so it seemed a good idea to go.

"I had also learned by then that it was really Tom's show. He'd been there for about five years and I recognised there was no way I could change this and be allowed to make a more positive contribution myself. I would always be the second string on the bow, and that was it.

"There was also a constant need to stand up to Tom's attitude all the time. If you didn't, he was quite capable of just riding over people. Again, and with the benefit of hindsight, even though we got on very well at times, if there had been more of a constant professional partnership between us, and if the scripts had been better, I would have been happier staying on with the programme for another year.

"I did talk to Graham Williams about my grievances, and indeed I always found him very easy to talk to. He was a very nice guy. But you got the feeling his hands were tied by the format of the show.

"He did, though, really want me to stay on. He didn't believe I was really going to leave, and wouldn't take no for an answer - which was quite extraordinary, I thought. I told the BBC a month before my contract was up that I wasn't going to renew, but even then I was as surprised as anyone that they didn't ask me back for the first episode of the next season to do the reincarnation. Perhaps they were really that peeved that I hadn't said yes to another year." □

THE MAKING OF A TELEVISION DRAMA SERIES

DOCTOR WHO

ARMAGEDDON

EPISODE ONE

1. Blitz on Atrios. Munitions workers huddled in a shaft. The War Room in chaos, the Marshal of Atrios trying to organise defence. A spaceship pilot at his controls doing his best against impossible odds. Suddenly in the munitions shaft, a Black Figure - the Shadow - materialises. Tells the workers not to fear... In the War Room: the same figure, the same speech. Beside the pilot: the same figure. The same rousing speech. Do not despair citizens of Atrios victory is at hand... At this point the spaceship of the pilot is blown to pieces. The Shadow is a holograph not real manifestation...

2. The Doctor and Romana and K-9 in the Tardis. In the right area. But the planets of Atrios and Zeos are not exactly where they should be. Their orbits highly eccentric. The surfaces of the planets sparkling. The lights, says Romana, so enticing. Not lights says the Doctor:atomic explosions...

3. The end of the Shadow's speech, heard by the workers and the War Room. One is at hand, One have sent for, One who will save us all and guarantee our victory over Zeos. The holograph fades... A ship is picked up on the War Room Scanners. Unidentified. Blast it...

4. The Doctor has come in for a closer look at the war, to try to discover why the orbits of Zeos and Atrios have gone awry... When the Tardis is bombarded by atomic flak. The Doctor is a fraction too late with the force field, and the Tardis is damaged, and spins down towards Atrios. Then it vanishes: dematerialisation noise.

5. Atrian patrol searching. Discovering the Tardis. Arresting and interrogating the Doctor and Romana. Dismantling K-9 as if he were a bomb...

6. Doctor and Romana about to be executed. Spies. Order countermanded at last minute.

7. The Doctor and the Marshal. Who tells the Doctor his arrival was foretold. The Doctor will lead them to victory. The Presence - as he calls the Shadow - has predicted it. And the Presence is never wrong.

8. K-9 escapes from the Bomb Disposal Squad.

9. Romana tending the wounded with Merak. A young Doctor. Food and medical supplies in short supply. Merak, though still patriotic, has as a doctor seen enough of the results of nuclear war to think that there might be another way. But to talk of peace is to risk death for treason. The only person who seemed to have any kind of an answer was Reina, his betrothed. Was? asks Romana...

10. The Doctor and the Marshal. A war weary veteran. The ten year war has run the resources of Atrios down well past survival point; no food, no supplies of any sort, even the nuclear materials are all but exhausted. And the flower of the nation is dead. Even if they win, the Atrians will have to move to another planet... So why fight on? asks the Doctor. Because only by destroying Zeos can we regain the natural orbit of Atrios. The Doctor is dubious of this theory. The Atrian are too far gone in hatred - almost brainwashed - to stop fighting.... The Marshal finishes by telling the Doctor that now he has arrived, as promised, victory is certain: they can use the mega ray...

11. K-9 wandering along after the Doctor. Comes to a high energy zone, is completely disorientated by the forces present... Spins round and round, is drawn down towards and into a darkened chamber - the mega ray room in fact. Is trapped by steel shutters - the alarms go off.

12. More about Reina from Merak. She was an astrophysicist working on the orbital problems of Atrios. she thought she had the answer - Merak does not know what that might have been - when she was captured during a Zeon commando raid... That was seven years ago. Nothing heard of her since . . .

13. The Doctor and the Marshal in the mega ray chamber. Technicians trying to discover the intruder. But as the Marshal says, the chances are that there is no intruder: the effect of the constant blitz has disrupted all forms of communication, even the radar, the alarms, etc. Fighting in the dark....But now the Doctor is here -The Marshal explains what the mega ray is: a laser type beam fuelled by a nuclear furnace. So powerful that no defence system is proof against it. Not even the Atrians', that is the problem: if they use this ultimate weapon (based on the one the Russians have now developed) they risk burning out Atrios as well as

Plotting Armageddon

ON 19th December 1977, Anthony Read received a fifteen page story synopsis titled *ARMAGEDDON*. It proposed one of the darkest and most bleak **Who** stories ever: a parable on the horrors of total nuclear war, unrelenting in its portrayal of misery and suffering. It balanced the realism of the situation with the metaphoric character of the Shadow - the personification of the apocalypse.

As with previous Baker/Martin scripts, there was a strong undercurrent of anti-militarism. The Marshal in particular was portrayed as a war-obsessed general spouting the endless rhetoric of a Haig, Petain or Churchill (whom actor John Woodvine imitated for key sections of his televised speeches - in particular the phrase "Our ships dominate their skies").

The storyline also came across as expensive given the sets and locations it suggested. Anticipating objections to the apparant costliness and other factors, the synopsis was accompanied by a letter from Baker and Martin in which they told Anthony Read:

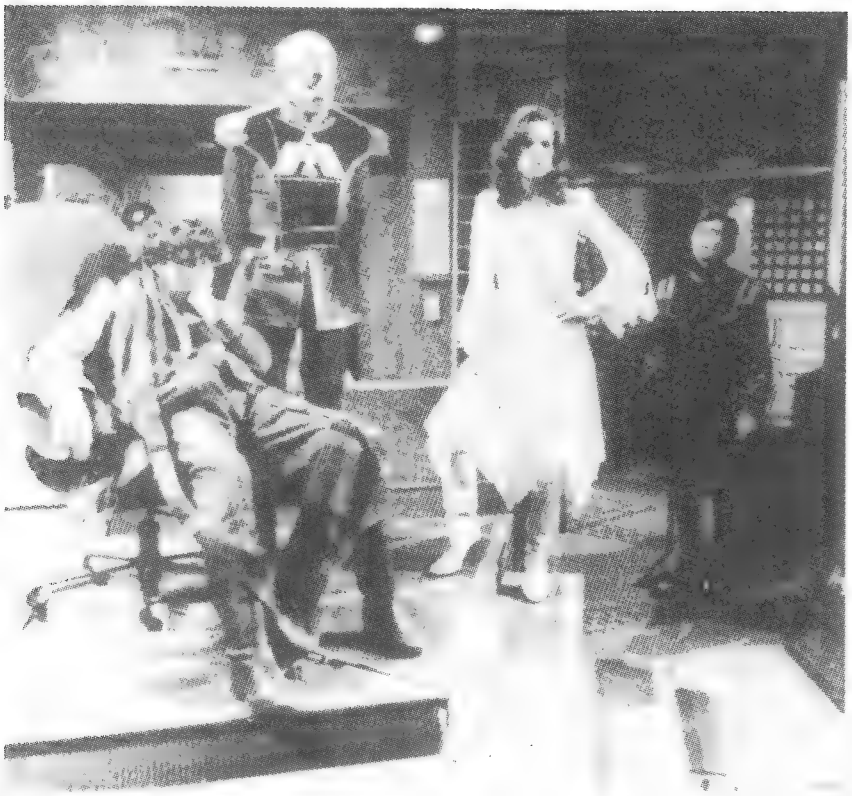
"We have not mentioned that most of the *blitzkrieg* stuff is only on sound: thuds and crumps. And we shall not be expecting great fleets of ships: blips on radar screen will do. In other words - we have already been thinking of ways to suggest, rather than show, a nuclear war in action. In the same way, obviously, the sets - corridors, war rooms, etc - will be the same for Atrios as Zeos, suitably dressed.

"The Shadow is a figure like those symbolising *War* or *Famine* in a Low cartoon: a black-hooded creature with an unseen but probably skull-like countenance..."

The story was in three segments. Parts one and two were primarily studio-based in the underground bunkers, factories and war rooms of Atrios. Parts three and four were location-based on the nuclear-devastated surface of Zeos with its wretched population of starving mutants (the Mutes). The last two episodes were based in the hidden *Castle of Evil* - the Shadow's lair.

Following Robert Holmes' advice to write six part **Doctor Who** stories as a four-parter followed by a two-parter, the idea for ARMAGEDDON was to concentrate of the Zeos/Atrios elements for four parts, and then to reveal the Shadow and his plans in greater depth only in the final two parts. Strong stage directions in the synopsis specified the need to keep the Shadow largely unseen until the conclusion of episode four - glimpsed only as a shimmering hologram, a skeletal hand, a spectral voice... The climax to part four would be a great unveiling - to show the skull-headed creature, whose own shadow it later transpires is the final segment of the Key to Time.

The Atrian princess was still a central character, but called Reina rather than Astra. She is kidnapped by the Shadow soley to lure the Doctor and the first five segments of the Key to the *Planet of Evil* - described as a giant asteroid like a Gothic Castle Dracula floating in space - an embodiment of the Shadow's symbolism of Darkness.



Graham Williams and Anthony Read were happy with the storyline, but Williams insisted on five changes. These were:

1. The Atrios/Zeos episodes were too insubstantial to sustain four parts, and were too repetitios in place.

2. Conversely, parts five and six were too complex, although Williams admired the invention of the Castle of Evil and the character of Drax.

3. The *Incredible Shrinking Man* escape ploy in part six was, Williams felt, too obvious.

4. The Shadow was not sufficiently identifiable as the villain until late in the story. His presence was too tenuous for too long. He should be made more easily identifiable earlier on.

5. Williams disliked the notion of the sixth segment being the Shadow's shadow. Romana's tracer would register that fact earlier.

Primed with these comments, Bob Baker and Dave Martin were commissioned to write the rehearsal scripts early in 1978. They completed all six by 17th March 1978, and Anthony Read formally accepted them in April.

It was not until September 1978 that Anthony Read began to restructure the story himself (see the *Production Notes* on *Script Editing* for the background). He was still in contact with the two writers (mainly through Dave Martin), but only really to approve the changes he made to their work.

Read spent until October reworking the scripts. Not all the changes were for narrative reasons - yet again inflation was eating into the **Who** budget, leaving less money than anticipated to finance the elaborate six-parter. In particular there was no money left for location filming. So everthing, except some of the model work, would have to be done in the studio.

WITH less than a month left before the first studio recording session, Anthony Read sent his revised ARMAGEDDON scripts to Bob Baker and Dave Martin on 5th October. In his accompanying letter he said: "I hope that you will not be too horrified by the butchery I have done. The main problem was that they were all fifty-minute scripts and therefore needed a hell of a lot of drastic cutting and, of course, when you get into that area you have to do some rewriting to smooth over the point where material has been chopped.

"On episode one you will see that I have put in a scene at the head set in the TARDIS. This is for three reasons:

"**1.** First to give a reminder of the serial element concerning the Key to Time

"**2.** We felt that it was really too long before we see anything of the Doctor, K-9 and Romana.

"**3.** The opening scenes are all very black and we felt the need to introduce a little humour before we plunged the viewers into total war.

"Although I have hacked the scripts pretty severely they are probably too long still, but I want to wait now until we start rehearsals to get more accurate timings."

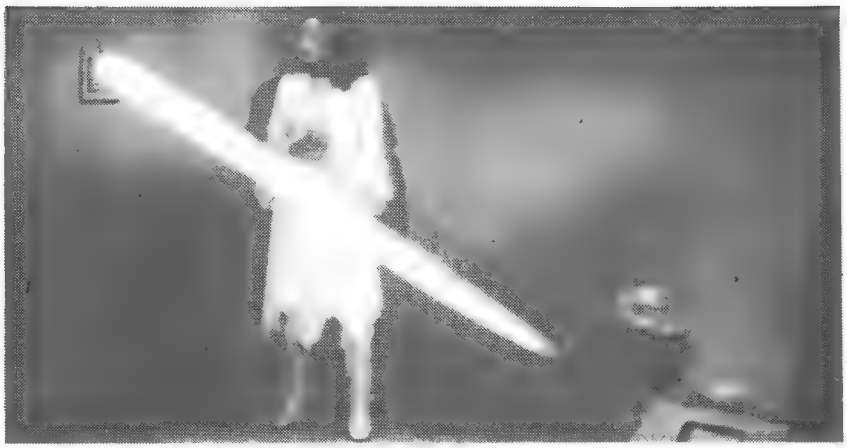
The final scripts differed considerably from the initial storyline (see the accompanying columns)

Zeos... But the Doctor, as the Marshal knows, has a force field round the Tardis. The Doctor demurs. Can't help. On other business altogether: the quest for the missing block of the Key of Time.
14. K-9 is trouble : he is being routed into the nuclear furnace: they are so short of fissionable material that they use anything... K9 and a mass of scrap metal on its way to the inferno.
15. Technicians tell the Marshal the intruder has been located and is being disposed of... What was it? Some form of remote-controlled missile which has now been defused... The description is that of K-9. That's K-9!
16. The Shadow breaking into the Tardis...
17. The Marshal: no force field, no K-9. The Doctor: I can't make a force field without K-9.
18. Romana has decided that if Reina is the key to peace then they should look for her. How? says Merak. The Tardis, answers Romana. I'll conceal you there and try to persuade the Doctor.
19. The Shadow ransacking the Tardis.
20. Romana and Merak on their way to the Tardis.
21. K-9 on the verge of destruction.
22. The Doctor seems to give in: okay, save K-9 and I'll build you your force field. Too late, says the Marshal, K-9 is past the point of no return... Nothing can save him now. That's what you think, says the Doctor. Plunges into the furnace feed-shaft -
23. Romana taking Merak into the Tardis. The Shadow in hiding. It looks as if the Shadow will destroy them both...
24. And it looks as if the Doctor and K-9 will be vaporised in the furnace -
END OF EPISODE ONE

EPISODE TWO
1. The Marshal orders complete emergency shutdown.
2. The Doctor is enabled to free K-9 from the surrounding scrap and they make their way out of the feedshaft Smouldering ..
3. Romana leaves Merak in the Tardis. Outside all is dark due to the shutdown.
4. The Shadow has overheard something of Romana's plan. He stuns Merak from behind and makes off undetected.
5. The Shadow rushes past Romana. Too dark for her to see who it is. She falls, clutches at the Shadow - later we see that she has a piece of his robe in her hand...
6. Before the Doctor emerges he checks that the Time Key blocks are still inside K-9: his real reason, so he tells K-9, for rescuing him.
7. The Marshal, his technicians, the Doctor, K-9, Romana et al, Working on the force field and mega ray problem. Romana very much against it: tries to tell the Doctor of her plan concerning Reina and a peace initiative. The Doctor will not hear of it. Very keen to rig up a force field and use the mega ray. She tells him the Tardis has been ransacked. For the Doctor things start to click into place.
8. The Marshal is called to the War Room: another Zeon offensive under way. He musters the defences. A last ditch effort. He commits everything to try and stave off defeat....
9. The mega ray chamber. The strategy of the mega ray. To protect the chamber and the mirror focussing platform in space with a force field. Then let the Zeons have it. Romana realises that what the Doctor is doing cannot possibly work. He tells her that K-9 and he have discovered one or two interesting things: the mega ray is beyond Atrian technology. So where does it come from? Another is that the Atrian explanation of orbital displacement - a result of Zeon nuclear space tests - is wrong. Romana wonders if Reina had come to the same conclusion. Someone, says the Doctor, wants this war to go on. Why?
10. As in Episode One the holographed Shadow appears to the beleaguered Atrians. The munitions workers. The War Room. Another pilot.. Another rousing speech. Blood, sweat, tears, guns before butter... All the technicians stop to listen. The holograph hovering in the War Room.
11. The Doctor fascinated by the Shadow' s warmongering. Is this why the war will never end? But Romana sees this as their chance to escape. while they are all enrapt by the Shadow... Right, says the Doctor, we've finished here: he and K-9 have sabotaged the mega

ray so that it cannot develop enough power to destroy both planets - a breathing space.
12. The Marshal, facing defeat, decides to use the ray. Hurrying down to press the red button, he and his guards see the Doctor escaping. They give chase.
13. But the Doctor and Co make it to the Tardis. Discover the recovering Merak. Romana remembers the piece of fabric. The Doctor analyses it. Another non-Atrian artefact... Things still clicking into place...
14. The Tardis materialises - model shot - on the space mirror platform. The Doctor tries to get in touch with the Marshal to tell him his conclusions: that they have been led into a pointless war by the Shadow. But the Marshal will not listen: furious that the Doctor has tricked him, determined to go down fighting and take the Doctor and Co with him... He presses the button. Not enough power to knock out Zeos... Even more furious he turns the mega ray onto the mirror platform where the Doctor and Co have landed. The Marshal's orgy of destruction:
15. Model shot of the mega ray smashing up the mirror platform...
16. Even more trouble inside the mirror platform. Zeon commandos, somehow knowing about the Marshal's plan, have landed on the platform to put it out of action. A running fight between Atrians and Zeons.
17. The Marshal using the ray to destroy the platform...
18. The Doctor and Co, fighting off the Marshal, the Zeons and the Atrians, would seem to have no chance of survival - surrounded on all sides, and with the very ground, so to speak, being smashed from beneath their feet...
END OF EPISODE TWO

EPISODE THREE
1. The Zeons capture the Doctor and Co.
2. They take them to their ship as the platform is disintegrated. And the Zeons' attitude changes: they regard themselves as having rescued the Doctor and Co from vastly superior forces. A kind of Entebbe operation.
3. On Zeos. Which is in just the same state as Atrios. No food, no manpower, no supplies. Only hatred of Atrios keeps the survivors going. It is Atrios' fault that the war began: their development of the mega ray etc, etc... Nothing the Doctor can say will change their minds. The Zeons' social organisation is vaguely communist, compared to the vaguely democratic system on Atrios. But in reality there is nothing to choose between them: both at war, both driven by hatred.
4. The Doctor has been got at. At least that is what the Zeons think. And for the rest of the episode they engage in various ways of breaking down his conditioning, so that he will help them, rather than the Atrians.
5. Meanwhile Romana and Merak and K-9 provide most of the adventure in this episode. They learn of the no go areas on Zeos - places where surface radiation has leaked to such an extent that they are fit only for prisoners and other subversives: a kind of radioactive Siberia where the victims are left to fend for themselves. This is where Merak considers he may hear something of Reina: even if it is only news of her death. The relationship between Romana and Merak has, so to speak, developed. A fact even K-9 is aware of: but both have high moral codes etc etc... K-9 operates as their geiger counter. Merak has to wear a suit. They avoid various patrols and make their way to the no go areas. Various horrific results of radiation poisoning and mutations: probably the only life forms, says Merak,that will survive. These too they escape...
6. Meanwhile we see that the Zeons are directed by the Voice. A disembodied personage who makes war speeches strangely similar to those of the Shadow on Atrios. Could it be....? The voice suggests to the Zeons that the Doctor possesses a superweapon that could end the war for now and all time. All the Zeons have to do is to drag out of the Doctor here he has hidden the components of this weapon...
7. The Doctor during his incarceration relieves the monotony by playing games of chance with his guards and losing consistently, paying out in jelly babies...
8. The search for Reina leads them to Asgard, an old and dying sage. Yes, he tells them. Reina was here.



Changes included removing all the key Zeon characters, leaving only a few walk-on Mutes as the Shadow's servants. The Mentalis computer was substituted for the Zeon commanders, and Reina was changed to Astra - to avoid too much similarity with the name of Prince Reynart in THE ANDROIDS OF TARA.

PART six still ended with the Doctor dispersing the Key, worried that he could never be sure that the Guardian to whom he entrusted the Key would be the White Guardian rathert than the Black one in disguise.

Baker and Martin either made the changes themselves or approved those made by Anthony Read. So too did Graeme McDonald, who wrote to Graham Williams and Anthony Read on 16th October: "I thoroughly enjoyed this serial. It is both exciting and inventive and so needs high production values. I hope we are able to provide these for Michael Hayes."

As rehearsals for the story got underway a sense of dissatisfaction arose about the conclusion of the Key to Time saga. Douglas Adams specially felt it was just too non-descript and lacked punch. With approval from Graham Williams and Michael Hayes he undertook his first formal duty as the new script-editor.

The portion he re-wrote was the last eight pages of episode six's script - from the moment of the Castle of Evil's destruction, through to the confrontation with the Black Guardian and up to the activation of the randomiser.

For contractual reasons all the typed up and printed copies of the final camera and transmission scripts bore the name of Douglas Adams as script-editor for THE ARMAGEDDON FACTOR as Adams retitled the story in November. However, concious of the vast amount of work he had done on the story Graham Williams insisted the on-screen credits should feature Anthony Read's name.

As script-editor, Douglas Adams also wrote the blurb details for THE ARMAGEDDON FACTOR which were printed in *Radio Times.* □

The Script Factor

Bob Baker and Dave Martin were regular writers on ***Doctor Who*** *in the 'Seventies, submitting up to four storylines a season. Many stories of course weren't commissioned - including the original introductory story for the character Drax (see* ***Nemesis*** *on page 6). Once their bluff was called, and they were asked to write two of the stories they suggested in a single season: "We wrote THE INVISIBLE ENEMY and UNDERWORLD straight off - one after the other," Bob Baker told IN-VISION. "Every year they used to say 'Got any ideas for us, Lads?' and we'd send in a bucket-full."We went on to talk about writing for Doctor Who, and in particular THE ARMAGEDDON FACTOR*

"With a writing partner you get reassurance. With the immediacy of a partner's comment you can edit it as you write it - or even before you write it down. On your own you have to make decisions for yourself, or with the script editor and producer. On more recent things I've also worked with the director. So on **The Jazz Detective**, for example, I worked with the director/producer to hone and tighten it.

" I think I'd find it difficult to go back to writing with a partner. I've worked with partners since Dave, though in a different way. Bill Stair, for example, used to talk on to a tape and I'd use that rather than pencil notes. I worked with Roger, my more recent writing partner, on *The Killing* in a similar way. Partnership is like a marriage without sex - you get to know each other's minds and use a lot of 'shorthand'.

"I felt more nervous than Dave did about heading off on my own after ten years. You're more lonely and you have to make your own decisions and make it work. That took me a couple of tries to achieve - a **Shoestring** and a **Doctor Who**. Then I could say to myself, "There you are, I'm a writer on my own." Whereas sometimes when Dave had been on holiday and I'd written something on my own, I'd been worried about it. But we'd use as much of it as if he'd been there when he retyped it. Dave used to do the typing - because he can spell! I remember enjoying writing THE ARMAGEDDON FACTOR.

"What we thought would be most difficult to realise on ARMAGEDDON was the all out nuclear war. In fact they did a good **Doctor Who** job on it. What we really wanted was something like the opening of *The Terminator*. Not that we'd seen Terminator then, of course, but that's the sort of thing we wanted - with thousands of people. Something like those Henry Moore drawings of people in the London Underground sheltering from the Blitz. We got the gist of it, but just the gist. But that's all they were able to do. And we knew what to expect.

But then, some time ago, she was taken. No, not by the Zeons. Or the Atrians. She just disappeared. But she told him of her work: she had predicted the existence of a third planet whose arrival would have had just such an effect on the relative orbits of Atrios and Zeos as has happened. But the mass of this third planet would have been so great that it would have been as visible as the sun or the moon. And there is nothing to be seen... And now of course it is impossible to make observation: the planet surface is lethal... Not for me says K-9. I'll go and see if a third world can be detected.

9. K-9 on the surface. searching the heavens. Nothing. Nothing visible that is. The unceasing bombardment makes a kind of Aurora Borealis in one section of the sky. And part of the curtain of light is being significantly bent (Explanation: mass bends light)

10. While K-9 is off on his search, a gang of mutants track down Romana and Merak. The old Asgard shows them a way of escape. Says he will send K-9 on...

11. We see the Doctor reluctantly spiking his last few jelly babies with knockout drugs. The guards win as usual, scoff the jelly babies, fall down in deep sleep... He makes a few final calculations on an envelope and sets out to find the Zeon Scanner: the place from which the raids on Atrios are directed... and the only place with observation facilities of outside space...

12. But his escape is discovered.

13. K-9 finds the old sage Asgard dead. Another figure steps forward to say that his companions have escaped and K-9 must follow him. When this figure fully reveals himself we recognise him as - the Shadow. He leads K-9 straight into a trap

14. Romana and Merak meet up with the Doctor. He takes them to the Scanner. They tell him of Reina's theory. I know, says the Doctor. There has to be a third planet. It is the only explanation. But before they can operate the scanner, Zeon guards burst in - kill them all! is the order. Blasters are raised -

END OF EPISODE THREE

EPISODE FOUR

1. The execution is interrupted. News is coming through that the entire battle fleet of the Marshal of Atrios is on course for Zeos.

2. The Zeon pilot gallantly staying on station - model shot -to report the progress of the battle fleet. And being wiped out in mid speech. By an immense Atrian battle carrier.

3. Scramble situation on Zeos.

4. The Marshal on the bridge of his flagship. He is planning a kamikaze attack. Death and Glory... Nothing else left to live for. A grand but futile gesture...

5. Panic in the Praesidium. Calculations show that the Atrian battle fleet intends to crash into Zeos. With such a weight and power of nuclear warheads that the planet will split and vaporise. They decide to do the same to Atrios. Up goes the Zeon fleet.

6. The Doctor now has to act to stop the total madness of total war. Nothing is to be gained. All they can do is lose. You should have helped us. Now you will die with us say the Praesidium. A lot of courage being exhibited - and a total lack of sense...

7. Powerless, the Doctor decides, apparently, to save his own skin. Much to Romana's disgust. Merak is now dangerously ill from radiation poisoning and a mutant spear wound. She refuses to leave him..

8. The Doctor in the Tardis waiting for the end. Shuffling the five pieces of the Key to Time. When it occurs to him that if you have five pieces of a six piece puzzle, you can deduce the sixth shape.

9. He drags a protesting Romana in. Demands a quick recap on the nature of the Key of Time and its powers of balance and stasis. It comes from the centre of time. A neutral and therefore timeless zone. Which is, says the Doctor exactly what we want. But, says Romana, you haven't got the sixth piece. He produces the sixth piece. Not made of the same material but near enough for a short experiment. We can't she says. They argue about the pros and cons of interference, toying with powers supposed to be beyond them. The Doctor goes ahead any way. Slots in the sixth piece. Nothing happens. Inside the Tardis.

10. But outside - Time itself has had a stop. They have an elastic interval: the Zeons, the Atrians, are all frozen in the same action, ever repeating, like a needle stuck

in a groove...
11. Back in the Tardis. They set the coordinates for the predicted spot where the new planet should be... But where is K-9? Can't stop to worry about that now: the spare part, the fabricated sixth piece in the Time Cube is already getting hot, cracking... And that means that the time-freeze situation won't last forever... They must find the sixth piece. Off they go.
12. Model shot. The third planet: now we see why it was undetectable: it is a super dense lump of black shiny rock shaped vaguely like a Gothick castle roughly hewn from coal. Its mass is like that of a planet. But its volume is far less... and it is hidden in a belt of small similar asteroids...
13. The Tardis materialises in the vaulted jagged black corridors of the Castle of Evil. As they step out
14. The hideous echoing laughter of the Shadow around them... No sign of the Shadow just a voice - You fool Doctor!!!!
END OF EPISODE FOUR

EPISODE FIVE
1. The Castle of Evil. The hideous gloating laughter, accompanying them through through its dank passages, lit by flares of gas. We see they are being followed - by the gang of mutants from Ep 3, the Shadow's dumb and hideous bodyguards...
2. A chase. The Doctor and Romana caught in a dead end. And a portcullis clangs down. They are effectively caged...
3. The Shadow in his lair. Turns to...K-9. Your friends have arrived. Let us greet them. And K-9 replies: Affirmative - Master... As K-9 turns we see that the Shadow has implanted a small black cylinder under K-9's chin: circuitry to control him... Virtually impossible to detect -
4. The Doctor has a problem: doesn't want to be caught with the Time Cube on him. But here can he hide it? Exploring the solid rock walls... Except for one hollow sounding-patch -
5. The shadow has gone straight to the Tardis thinking Time Cube will be there. His anger on not finding them... He is cruel and vicious to K-9 He reveals that he is in possession of the sixth piece. But we do not see it yet, or realise what form it takes....
6. On instructions from the Shadow. the mutants drag the Doctor and Romana along more corridors and through them into a chamber. A wall of flame leaps up behind them , providing an effective barrier... The Doctor more worried by having left the Time Cube behind in the wall of the dead end... Romana explores their new abode. Discovers a strange ragged figure with staring eyes, gibbering with fear and madness... It is Reina, she discovers, or rather - what is left of her... A pathetic creature. Or so Romana thinks But we realise that Reina is in the power of the Shadow -
7. Meanwhile the Doctor has been investigating another area, tracking down a tapping noise. Eventually he finds Drax, in an oubliette, like the Count of Monte Cristo's mate... white bearded, matted hair... He smiles up at the Doctor, cunningly. Allo Theet - Theet? You're Theta Sigma arncha? Thought you might be dropping in. And Drax pulls a rope: The oubliette lid opens and the Doctor falls through. Crash onto the floor.
8. Meanwhile, Romana has fallen for Reina's ruse and is following her, thinking that Reina is going to show her a way out. Instead she leads her straight to the Shadow's lair. Where the Shadow and K-9 prepare to force the whereabouts of the Time cube out of Romana -
9. The Doctor and Drax. Establishing Drax as another renegade from the Time Lords: like the Doctor, Drax could not stand the rigid hierarchical woolly liberalism of Gallifrey and became a wanderer in Space, making a living from dealing in and repairing various items of space technology . A kind of self-employed trouble shooter and a bit of a gipsy. Drax and the Doctor are mutually suspicious: either could be a plant from the Shadow Drax was incarcerated after fixing up the mega ray... The story so far from the Doctor... and some more information about the Shadow's plans from Drax. He wins the Doctor's confidence by saying that the Shadow has told him, on pain of death to find out where the Time Cube is. But Drax doesn't want to know: all he wants is out. The Doctor is worried when he learns that Reina is in the Shadow's power... and

pect - it was all so low budget.

"The outline probably took about four weeks to prepare. But of course we'd already had a script conference with Graham and the script editor about the general direction of it. It's arduous - there's not the freedom that writing gives you, it's kind of blinkering: what happens next... But without the outline we couldn't write the script, and they wouldn't know what we were going to write in the script. It's the Production Office that wants the outline. If we were going to just write the script we'd probably have only about one page of notes. The outline is a requirements document - it's like a specification for a building; a blueprint. We say: 'We're going to build it like this', and they say, 'Hang on a minute - we wnat it like that, and we don't like this bit...' They can start budgeting once they've got the outline.

"From the outline we produce a load of handwritten notes, and we use those to change it round.

"So, for example, the Shadow giving the pep talks changed to the Marshal's patriotic speeches. This was a mirror image of Britain during the war in 1939-1940, which we felt came off really well. Even looking at the tape again now, I still think it works.

"In the original outline, the Zeons were still alive. But in the script the Marshal is doing all his stuff against a lump of rock. There was a fear of repetition - having seen Atrios in its death-throes, Zeos would have been virtually the same - a duplication.

The third planet was another late addition. I don't think this outline [reproduced in the side bars] was the original storyline. We replaced the Zeons with the mutants, who were the Shadow's men.

Asgard, the dying sage who wasn't in the final script, was originally the one who predicted the third planet. Then we though it would be much better if it was the Doctor who did that, and we fed that into part one. Asgard, of course, comes from the Teutonic myths. In fact, the whole thing was getting a bit Teutonic - waiting for the Valkyries. That, plus the Greeks and Trojans, was all stuff that Dave and I loved.

"So, the storyline tends to be more of a *rough*. Then in your last meeting with the script editor you change a lot of things. We wrote them in pencil on the storyline, which was our template. Dave used to do the notes - in really small writing, which only he could still read! I think the level of changes in this one were fairly typical. The storyline is the most difficult part of a **Doctor Who**. The script is easy compared to the storyline.

"A six-part script is a long piece of work. You've got to get parts four and five to lift - it tends to sag. So we introduced Drax which gave it a bit of a buzz. That's the bit we called

Nemesis

Bob Baker recalls something of the first story he and Dave Martin outlined for the Cockney Time Lord mechanic Drax:

"Drax has a garage full of old TARDISes. He does them up and sells them. The Doctor needs his TARDIS repairing (the dimesional stabiliser needs attention), and it lands amidst all Drax's old TARDISes. Drax says to the Doctor: "That's a mark 3, innit? Yeah, I can mend that."
"It later emerges that Drax needs diamonds to make some of the old TARDISes work, so he has stolen the crown jewels. He's been arrested and spent time in prison, but has escaped.
"Drax has spent a lot of time in London - hence his accent. The Doctor has to hang around with this guy who's stolen the crown jewels.
We picked up on the facts he'd been in London and got locked up in jail when we reintroduced the character in THE ARMAGEDDON FACTOR." □

the *dogleg* - you have to bring in something new at that stage. I was surprised when I watched THE ARMAGEDDON FACTOR again - Drax came out just as we'd hoped: a bubbly character who gives the story another lift.

"As a result, we could leave the time loop for quite some time while the Doctor and Drax are together. I thought the "three-two-one-fire" stuff was great.

"The only real constriction from the running theme of the season was finding the sixth piece. We discussed it with the script editor a lot, and asked if it could be a person. That would give the Doctor a dilemma about someone he knows and cares for. Originally the segment was the Shadow's shadow, but in our later discussions we decided that was clever but it didn't *mean* anything. It wouldn't make the Doctor want to convert the piece back again.

"We didn't know about any of the other scripts for the season - we hadn't read any others. The only people who knew about the other scripts, because they dealt with them, were the producer and script editor. So they could guide us, they helped us modify our story as time went by. We had no idea where the Doctor was going to find the other segments until we saw the shows on the television the following year!

"The episodes we delivered were too long, and they had to be cut. Dave and I had a tendency to overwrite, to fill it. But nobody minds

a script editor cutting. Whatever they shot worked! There's a lot of ad-libbing in THE ARMAGEDDON FACTOR, mind. Tom and Mary were doing a bit of a double act - saying a line and repeating it, sort of prefiguring **Moonlighting**. It was quite jolly, but got to be a bit much after a while. They were trying to get a style, I think, whenever there wasn't really much going on - in the TARDIS for example. But I think it became a bit obtrusive.

"K-9 was useful. We tried never to use him in a stupid way. In ARMAGEDDON he is used as the Trojan horse. He can be used to open doorways. He was used to be the person in train when the others were doing something important. There was a strong K-9 thread running through this story. I have always thought K-9 was a writer's dream - you could always use him as another character in the story. He get used as a gun or a computer, but in this story he was taken over by the baddy. And he gets a guilty conscience - calls the Doctor "Doctor instead of "Master." In some later stories they used him just as a gun or a joke.

"The guy who was supposed to play the Guardian, and who played him in the first story [THE RIBOS OPERATION], was Cyril Luckham. But he was appearing in Murder At The Wedding which was the last thing Dave and I wrote together, so he wasn't available and they got Valentine Dyall instead.

"We were doing quite a lot of "last things together." Of course, I went on to do NIGHTMARE OF EDEN. I'd have liked to have done more, but I was working more for HTV.

"THE ARMAGEDDON FACTOR was hard work, but Dave and I had a good laugh at the end of the day. There wasn't be any particular gloom and doom about it being our last one. I think we enjoyed it as much as any we'd done. □

Romana is with her -
10. The Shadow and his band of mutants strapping Romana to the interrogation bench: something between a truth machine and a rack... each wrong answer produces another stretch...
11. The Doctor. Drax. How to get out? The oubliette hole too high to reach even on each other's shoulders.
12. Romana in pain - the shadow presses a button -
13. The sound of Romana in pain can now be heard by the Doctor. The Shadow's ultimatum. The Time Cube or Romana dies a slow and agonising death... While the Doctor tries to talk his way out, we see Drax putting together a collection of hidden bits and pieces. Into something that looks like a weapon. The confrontation between the Doctor and the Shadow. The Shadow says he has stage managed the war between Atrios and Zeos to lure the Doctor in. For the other five pieces. Then says the Shadow, he will use the Key to Time to set the two halves of the Universe at each other's throats... this puny war is just a rehearsal... and the mutual destruction of the Universe will be music in my ears. Not power Doctor - destruction ! ! !
14. After this declaration of intent, the Shadow thinks he will have spurred the Doctor into action, into retrieving the Time Cube from its hiding place. So he sends K-9 to track the Doctor down: having fixed up K-9 so that he can see through K-9's eyes.
Off goes K-9... He orders the mutants to destroy Romana: since she does not know where the Time Cube is, she is superfluous...
15. The Doctor determined to get out. Plagued by Romana's protestations to let her die and save the rest... And worried by the state of the Time Cube...
And then Drax turns on him, levels the blaster type device at him.
It looks as if he is going to kill him: as he pulls the trigger
END OF EPISODE FIVE

EPISODE SIX
1. Drax points the device at the Doctor. Dzzt. The Doctor drops the 'candle' [Tracer]...
2. K-9 appears at the oubliette cover. Sees the Doctor shrinking....
3. The Shadow berserk. orders K-9 to stop it! stop it!
4. Drax turns the device on himself. He shrinks. He leads the Doctor to the foot of the wall. K-9 from above trying to stun them. But they are too small for a good shot... Drax helps the Doctor haul away a stone and they climb behind it. Leaving the 'candle' behind.
5. The Shadow orders K-9 to follow.
6. K-9 obediently trundles forward - and disappears with a great crash through the oubliette hole.
7. K-9 on-its side, a panel missing, a couple of dents... and the black cylinder fixed by the Shadow has also fallen off - K-9 no longer answering to the Shadow's commands...
8. The Shadow takes a couple of mutants and races off leaving Reina, Romana and two other mutants. Romana starts to make her last speech... mentions Merak. The name gets through Reina's conditioning. Romana talks more about Merak... Reina starts to come back to 'normality'... Romana gets Reina to fell the mutants and together they escape.
9. The Doctor and Drax inside the walls. Drax' Colditz. The explanation of why they are small. Drax never goes anywhere without his dimensional stabiliser, as some mechanics always take the distributor cap with them. Nobody can nick Drax' Tardis... And as a dimensional stabiliser it can make him small. and he has tunnelled all through the Castle of Evil, looking for the way out. After four or five years he knows his way everywhere...
10. Back on Zeos, things are getting worse. (We have cut back from time to time to show the time loop stretching more and more...soon it will break....) The Marshal's finger is getting closer and closer to the red button...Etc.
11. The Doctor and Drax. Hurrying as fast as they can on their tiny legs to the place where the cube is. Getting lost... cross a corridor... nearly getting trodden on by mutants...
12. The Shadow and his two henchmen at the oubliette. He orders them to drag K-9 out intending to set him on the trail of the Doctor. Curses when he sees K-9 is damaged and will take time to fix... Then the

Shadow sees the 'candle'. Pounces on it with glee. Now he is sure of getting the Cube... They all rush off leaving K-9, still bent and electronically dazed, going round in circles...

13. Up come Romana and Reina. K-9 cannot help them because he cannot move properly: but he can tell them which way the Shadow went...

14. The Doctor and Drax in the escape route through the wall... crawling along... seeing the glow from the Cube... not the cube itself.... But they are too late. They arrive in time to see the Shadow's hand groping in the hole in the wall... And taking the cube... Now they are really done for... Despair. The Doctor sits down upon the ground. Tell sad stories of the death of kings...

15. The Shadow bearing the Cube back to his lair in triumph and exultation...

16. As soon as the Shadow removes the fake sixth piece the two planets will blow up... The Doctor finds this very depressing... Then - an idea strikes:

17. Doctor and Drax, still miniaturised - about a foot high, say - arrive back at where the mutants left K-9. Drax goes inside K9 to fix the circuitry... The Doctor goes in as well.

18. Romana and Reina have discovered that the Shadow has the Cube. They try to fight their way into the lair. A blaster fight between them and the mutants...

19. This fight delays the Shadow's actions: what he is doing is setting up the process which will turn the (still unknown and unseen) sixth piece into its proper time block form...

20. Meanwhile. K-9. Moving off at normal sped. With no sign of either the Doctor or Drax

21. Romana and Reina are pinned down by the mutants. And in considerable danger...

22. The candle. has been fixed up by the Shadow to cast its light across the Shadow onto a special wall in the lair... And now we realise, as the effect happens, that it is the Shadow's shadow, cast by the glowing light of the 'candle' that is being transformed into the sixth piece... The sixth piece materialises and the Shadow takes it - at last!!!!! - in his hand, bears it to the Cube...

23. K-9 rolls up in the nick of time to do his seventh cavalry bit on the mutants. Romana and Reina are all set to storm the Shadow's lair... But K-9 insists that he goes in alone...

24. K-9 into the lair as the Shadow is about to transpose the true sixth piece for the fake sixth piece - now in a very cracked and ruinous state...

25. The Shadow tells K-9 what he is going to do once he has the power that the Key to Time will give him: engineer the Armageddon and sit back and watch the spectacle. Whatever power created the universe, a greater power - i.e. the Shadow - will encompass its destruction...

As this megalomaniac speech goes on so we see the broken panel on K-9's side move and two small figures emerge... The Doctor and Drax, with his stabiliser... The Doctor gets into position:

Now he shouts at Drax... Drax discharges the stabiliser. The Doctor grows full size... And snatches the cube from the Shadow as the new sixth piece is about to displace the old one...

26. A chase to the Tardis. Drax stays behind to give them a chance to escape....And also to get away in his own Tardis.

27. In the Tardis. The Doctor now contacts the Zeon and Atrian battle fleets. Tells them that the real cause of their troubles is the Shadow. He gives both fleets the coordinates for the Castle of Evil...

28. The Castle of Evil blown apart by the combined weapon load of both battle fleets... The end of the Shadow...

29. Reina and Merak reunited. What will they do now? Go off to care for the mutants - the lepers of Zeos and Atrios. The peace conference underway... the orbits will be restored... The surface recultivated. Both have learned a hard lesson:

30. The wrap up... On the Tardis. The Doctor has been thinking: is equilibrium a good thing Can the White Guardian prove he is the White Guardian? The Doctor decides the best thing to do is to scatter the whole lot through space and time once more...

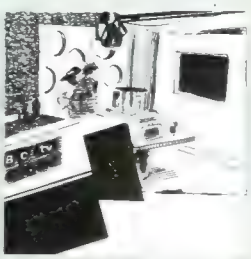
END

or How I Learned to Stop Worrying and Love The Agamemnon Factor

DAVID OWEN explains

cobwebs, and a pair of glowing red eyes watches the Doctor from the shadows.

Also abandoned, as it did not look good on the day, was a sequence in part five where the Doctor finds an insect-like "thing" crawling up his coat, again during his exploration of the Castle.



The first ***STUDIO RECORDING*** block spanned Sunday 5th till Tuesday 7th November 1978 and took place in studio TC3, where all of this story was recorded. The main sets required for this first shooting schedule were the Atrian war room, the hospital (with its collapsing roof), the K-Block recycling chamber and the various corridors of Atrios.

One of the first scenes to be recorded was the soap opera featuring the "Hero" and "Heroine" against a ChromaKey fed background of an imaginary Atrian city-scape - in reality a colour picture painted by Richard McManan-Smith. Ian Liston, who played the "Hero" also provided nearly all of the intercom-fed voices of Atrian pilots and damage-control officers reporting to the Shapp.

This studio session was largely problem-free. This was not the case with the second block, spanning 20th - 22nd November. The principal sets here were all those on Zeos (corridors, interrogation room, Mentalis, etc), the flight-deck of the Marshal's ship and the TARDIS interior.

But right from the first morning industrial action by BBC technical staff plagued the production team. Graham Williams summed up his tribulations in a memo to Graeme McDonald, written on November 23rd 1978 - the date of **Doctor Who**'s fifteenth anniversary and the day after Tom Baker and Mary Tamm had appeared on Nationwide along with Carole Ann Ford to celebrate the anniversary.

In his memo, Williams told McDonald: "We were unable to start camera rehearsals on Monday at 11am because of the union meeting which continued until 1pm. The industrial dispute continued to affect recordings so that on Tuesday we lost three quarters of an hour of

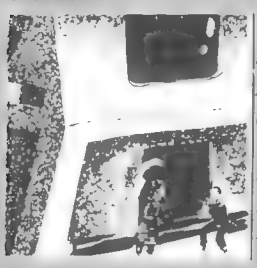
recording time and one quarter hour's recording time on Wednesday.

"Thanks to the good will of the technical staff and the efficiency of the production team we were, however, able to complete all our scheduled recording with the exception of interior TARDIS scenes - the smallest set in the studio. I have already discussed briefly with the production team the possibility of catching up with those scenes in our next recording (week 49) and we shall, of course, try to complete the programme by the end of that recording.

"Whilst I am unable to offer any guarantees, of course, I am nevertheless as optimistic as the present circumstances allow."

Williams' optimism was not unfounded, and he was indeed able to get the TARDIS set remounted for the final day of the final recording sessions, between Sunday 3rd and Tuesday 5th December.

Sunday and Monday saw most of the action taking place on the Castle of Evil sets. These scenes involved some very complex camerawork and a hefty reliance on rollback-and-mix and ChromaKey to achieve shots such a the Doctor walking past himself, Merak walking through a hologram of Astra, and the miniaturised Doctor and Drax escaping from a Mute. Most complex of all to line up and shoot was the multiple split-screen and multiple-feed ChromaKey sequence where the Doctor - sees five Romanas, one at the end of each tunnel leading from the spoke antechamber.



Not all of the ***ELECTRONIC EFFECTS*** shots (like the effects of the Mutes' and Atrians' gunshots, or the flashing lights of the transmat) were assembled in camera this day. Several sequences - for example the shrinking of Drax and the Doctor - were not put together until the Gallery-only day on December 29th. This enabled Dave Chapman to use the BBC's new "frame store" device - an early Quantel system - to colorize and repeat a stored image prior to adding it to the output tape. Using this technique multiple, different-sized images of Drax and the Doctor are achieved as they shrink and enlarge.

VIEWERS come to THE ARMAGEDDON FACTOR expecting a pretty big pay-off. From the opening minutes of THE RIBOS OPERATION, less-than-dedicated **Doctor Who** viewers were encouraged to follow the season by a hidden interest, only alluded to verbally: "universal chaos" and the conflict between the White Guardian and his as-yet-unseen Black counterpart. With the exception of THE STONES OF BLOOD, the season up to THE ARMAGEDDON FACTOR had seemed disappointingly low in emphasis on the reason for the Doctor and Romana's quest.

The story starts very promisingly: total war, a beseiged planet on the verge of breakdown, an insane military leader controlling the madness of conflict alongside a frail royal figurehead. Gloomy corridors lead to zones of fatal radiation levels, as dust falls from countless aerial bombardments. Things could hardly be worse. If the Black Guardian were to be influencing events anywhere in the cosmos, it would surely be here - where human misery is at its self-inflicted peak.

This is not, however, a story about the insanity of war. This situation has been engineered very precisely. The Black Guardian is well aware that the sixth segment will only come into being when the sixth princess of the sixth dynasty of the sixth Royal House of Atrios does so. He has waited a long time, and placed his agents (the Shadow and the unwitting Marshal) so that the Doctor will bring him the first five segments.

The logic of this (that the key is useless without the sixth segment, and that it's easier to gamble on acquiring the crucial final piece before your opponent) is perhaps a little flawed. The Doctor, after all, manages to construct another sixth segment (if not the actual sixth segment) from the mysterious chronodyne substance, thus partially defeating the Shadow.

A similar logic applies to those responsible for the sixth segment of the Key to Time season. Depending on how they view the sequence as a whole, it is simply necessary for them to construct a story which plugs the gaps in the sequence left by the first five stories. So to judge THE ARMAGEDDON FACTOR, you have to place it context.

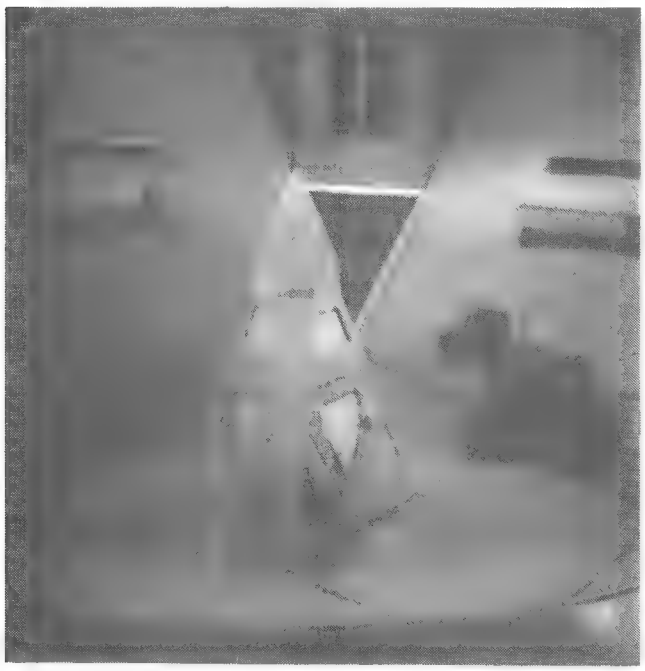
I get the impression that Bob Baker and Dave Martin showed a little boredom scripting this story. Certainly, they would never work on the series together again afterwards. But as the narrative unfolds, the funereal atmosphere of the opening episode makes way for a much more lighthearted approach. It is similar to the way that the previous six-parter, THE INVASION OF TIME, showed signs of strain after a few episodes before lightening up. The end-of-season epic's days were as numbered as those of the Baker/Martin partnership.

And yet this story is still **Doctor Who**'s

finest representation of warfare and human suffering since GENESIS OF THE DALEKS, even if the continued development of initial characters is neglected. These initial characters include the Marshal and Shapp. The former spends his time trapped in a time loop saying "Fire!", once his usefulness as a mad military dictator (with voices in his head) is over. The latter's characterisation is completely dependent on casting and performance. Even brave young surgeon Merak spends much of his time trapped in a time loop saying "Astra!" once his usefulness as Princess Astra's co-conspirator is over.

The writers did several things once they abandoned their initial creations. For example, there is an irritating overuse of the Baker/Martin creation K-9, who escapes being melted down for scrap and then embarks on a series of adventures in which he encounters a fellow mechanical intelligence, Mentalis, and later falls into the Shadow's thrall and nearly betrays the Doctor. Given Baker and Martin's fondness for their creation, and K-9's complete absence from the previous story, this is perhaps forgivable.

Less so is the presence of a cockney Time Lord, Drax. Valuable and entertaining as the character certainly is, making him a Time Lord only emphasises how strangely the Doctor and Romana behave in the latter part of the story: instead of constantly being captured and even begging the good protagonists to let them help, they hover in space in the TARDIS with the Key to Time doing their bidding from a designer coffee table. It may be impressive that it puts the entire universe in a time loop, since they key should appear as more than a mere abstraction. But it does rather detract from the Time Lords' vulnerability.



The apparent scope of this story seems to vary enormously. Atrios and Zeos might as well be two cities for all we see in them (as GENESIS), and would seem to be in the same solar system given the representation of their battle fleets on

Another notable effect is the electronic red symbol which K-9 follows into the recycling shaft.

A video-disc machine was available to simplify doing all the repeated time loop scenes.

Tuesday 5th December was the only day on which Valentine Dyall was required on set to record his scenes as the Guardian. A basic camera lens over-exposure achieved the simple effect of dropping his image into negative on cue.

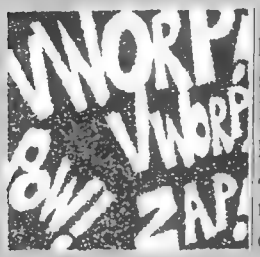
It was a notable day for many reasons, not least being that it wrapped up production on the last **Doctor Who** six-part story seen to date (although not the last six-parter attempted). John Leeson's contact expired and he had made the choice to return to live acting, not wishing to be type-cast merely as a voice-artist. It was Mary Tamm's last day with the programme too, although she had by then already suggested to Graham Williams and Douglas Adams that Lalla Ward, with whom she had become friends, would make an ideal successor.

To mark the close of production on Season 16, the cast and crew threw an early Christmas party on the set, toasted with bottles of champagne. Some impromptu and totally ad libbed repartee between Tom Baker and John Leeson (as K-9) about what each would like for Christmas (*smaller door cills* for K-9, and *Mary Tamm* for Tom Baker!) found its way on to one of Doug Bird's now-infamous BBC Christmas Tapes, along with several out-takes from THE ARMAGEDDON FACTOR.

Videotape editing began immediately after the Christmas and New Year holidays on 2nd January 1979. With no transmission break scheduled this year there was a need to work fast to get finished episodes ready for their allotted broadcast slots - starting January 23rd. The first music recording session for episodes one and two took place just six days ahead of episode one going on air.

Dudley Simpson conducted a seven-piece orchestra for this serial's ***INCIDENTAL MUSIC***. This included one cello, two woodwind, two French horns,

one percussion and various keyboards, including an organ and synthesiser. Among the passages of incidental music Simpson composed was a rousing *Atrian National Anthem*, played whenever the Marshal made one of his bombastic speeches.



Another person who had to work at great speed on the show was Dick Mills. As usual, he provided the ***SPECIAL SOUND*** - including the many shrieks and clanks of the Shadow's domain. One specific instruction he was asked, in the script, to observe was ensuring K-9 computerised conversations with Mentalis did not sound like the five-tones from *Close Encounters of the Third Kind*.

The rapid editing dubbing and syphering of these episodes for ***TRANSMISSION*** explains why several of these episodes have slightly different reprises to their preceding cliff-hanger endings. This is particularly notable between episodes one and two, and between three and four. For most episodes, the preceding end of episode close-up of a major character (the Doctor, Romana, the Shadow) was dropped.

Episodes three's original running length was 25'03", ending with the Marshal saying "Prepare to attack." But when the Presentation department told Graham Williams he could not exceed 25 minutes in total, 25 seconds was hastily cut.

Curiously part five was allocated a thirty minute slot from 5:20 till 5:50 (according to *Radio Times*). However, as it turned out, the episode started late at 5:26. This episode's broadcast was also hampered by a short technical breakdown mid-way through transmission. In the DWAS magazine *TARDIS*, Graham Williams said: "The official reason for the break . . . was that a through a technical fault the transmission machine went into the wrong mode. My own theory is that, without wishing to cast aspersions on my technical colleagues, a prime digit hit the the war room's screen. But when the Marshal and his pilot go to bomb Zeos, they appear to traverse hundreds of light years of interstellar space in doing so..

An element of fun is apparent in the story from the beginning, and later becomes more obvious: mythical references. "Armageddon" is the final biblical battle between good and evil, but it's also suspiciously close to "Agamemnon". He was the commander of the Greeks, who worshipped Zeus (Zeos) and who held the city of Troy (Atrios) under seige. The object of the Trojan War was Helen, a single woman who caused untold misery and destruction because of who she was in life rather than because of her actions. In just the same way, Astra's heritage unwittingly causes her people's downfall.

Perhaps it was this reference to the siege of Troy that encouraged Baker, Martin, and Anthony Read (script editor of UNDERWORLD and writer of THE HORNS OF NIMON) to include the Drax subplot. Thus Drax uses his TARDIS dimensional stabiliser to create a gadget which shrinks him and the Doctor so that they can sneak into the Shadow's lair aboard K-9. The term *trojan horse* is today also used to describe a piece of computer technology that pretends to be something it is not, in order to fool the unwary. So the writers were truly ahead of their time.

The mythological reference points provide a degree of structure to THE ARMAGEDDON FACTOR which, otherwise, seems disappointingly absent. The story meanders distractingly in order to incorporate the disparate elements which do not sit comfortably together. It consequently loses menace, and the underlying sense of impending disaster which starts in the opening episode seems to diminish, rather then grow in the manner of an apocalyptic drama. Perhaps this is a reason for disliking the more colourful elements of the story - a feeling that they displace what should be the main strand of the story, armageddon itself.

A more successful conclusion in a similar circumstance was the later season of stories called THE TRIAL OF A TIME LORD. In that, the final six episodes were to consist of a final story within the sequence, followed by a mini-story to wrap up the loose ends left by the rest of the season.

It is the ending of THE ARMEGEDDON FACTOR which disappoints most. All my other reservations about the story could have been set aside if the climax was worthy of the season as a whole. Sadly, it is not. Princess Astra's transfiguration into the sixth segment is over in the blink of an eye, and the entire Atrios/Zeos plot is dismissed in a few comic lines with Drax. Even the Doctor's second face-to-face encounter with a Guardian takes place on the TARDIS scanner, a poor contrast to the atmospheric garden of THE RIBOS OPERATION.

And then the Key to Time is scattered, the Doctor and Romana's efforts of the past twenty-five weeks now seem to have been in vain. And the impending "universal chaos" that has kept us all watching throughout the season seems to be conveniently all but dismissed. □

Audience

ITV (LONDON region) **SATURDAY 20th JANUARY 1979**

POR T	NEWS	DAIRY CRAFT KONTIKI	HAPPY DAYS	C.H.I.Ps (U.S)	CELEB -RITY SQUAR -ES	DICK TURPIN	film CATCH ME A SPY			NEWS	GEORGE BURNS "100th" BIRTHDAY		HOW TO STAY ALIVE	
5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00		

BBC 1

POR T	PINK PAN- THER	NEWS	JIM'LL FIX IT	DR. WHO Arm. (1)	Saturday Night at the Movies CHARRO		THE TWO RONNIES		STARSKY & HUTCH (rpt)	NEWS	MATCH OF THE DAY		PARK -IN -SON	
5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00		

BBC 2

ONE MAN AND HIS DOG	NET- WORK	MEN OF IDEAS	TOM ROBINSON CONCERT	NEWS	HORIZON		ON THE REC- ORD	Ballet PIERROT LUNAIRE		THE AMERICAN SHORT STORY			film THE LON- ELY MAN	

DOCTOR Who disappeared off into time and space again at the end of February 1979, completing another 26-week season. Overall it had been a successful year, although the grand average of ratings per episode slipped from just under 9 million a week for the previous season to just over 8.5 million for season sixteen.

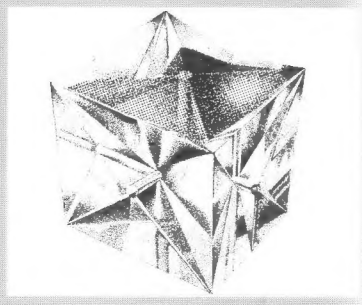
DAILY MIRROR, Wednesday, February 7, 1979
Dr Who girl takes the lead
DR. WHO's new girl went walkies yesterday with the doggy computer, K9.
Lalla Ward, who is already in the television series as Princess Astra, gets promoted in the autumn to Dr. Who's assistant, Romana.
She takes over from Mary Tamm, who wants to do more theatre work.
Lalla, daughter of a real Lord — Viscount Ranger — becomes a Time Lord in an amazing switch.
She said in London yesterday: "Romana will dematerialise as Mary at the end of the present series and rematerialise as me in the next.
"It sounds complicated but it's very simple for a Time Lord."
Picture by CHARLES LEY
K-9

The first waves of the coming home video revolution were probably a factor in this drop. High street giants *DER* and *VisionHire* had both started attractive offers for home rented video recorders in time for Christmas 1978. Meanwhile videotape-hire outlets were appearing throughout the British Isles.

Where THE ARMAGEDDON FACTOR did fall down significantly was in the area of chart positioning. THE TALONS OF WENG-CHIANG had, at best, been the 8th highest-rated programme of the week. At worst it was 32nd. THE INVASION OF TIME had managed a top rating of 28th and a low point of 47th. For THE ARMAGEDDON FACTOR the position dropped to 36th at best, and a poor 93rd for the worst rated episode (part one).

This drop was also reflected in the audience figures. In previous years the final story of a Tom Baker season had attracted audiences of well above 10 million. This time the ratings were 7.5, 8.8, 7.8, 8.6, 8.6 and 9.6 million. There was also evidence of better ITV planning to explain the lower audience figures for **Doctor Who**. Fast-paced American adventure series were enjoying a resurgence of popularity with viewers. Southern resurrected **The Bionic Woman** while ATV varied between episodes of **The Incredible Hulk** and **The Life and Times of Grizzly Adams**. A new series which did win a lot of viewers was the cop show **CHiPs** which both Thames and Yorkshire decided to schedule opposite **Doctor Who**, pre-empting episodes of THE ARMAGEDDON FACTOR by up to half an hour each week.

The BBC fought back on three fronts. One of



wrong button!"

Episode six played out with the full version of the **Doctor Who** theme on 4th February 1979, bringing to an end an uninterrupted 26 week season. For all its production problems, THE ARMAGEDDON FACTOR won critical approval from all concerned, including Graeme McDonald. The **Doctor Who** office received many letters about the show, the vast majority of them favourable, but for Graham Williams, one letter in particular stood out as a testament to all their long and hard work:

"Belated thanks and congratulations over the good things in THE ARMAGEDDON FACTOR. I have been waiting for five weeks before writing (thanks for invitations to previews every week - I thought these old, courteous days had gone) in order to see what I thought of Drax. It worried me more, this first proletarian Time Lord, than anything except K-9.

"I think Barry Jackson has done a great job, put far more into it than he needed have done, I am very pleased with the result.

"I think luck has given the show another winner. Please give the director my congratulations also. If I were you Graham I would think about keeping Drax in the show - not every story - but now and again. I'm not thinking of any royalties - as far as I am concerned you can have Drax as a gift. I would just hate to see such a good and entertaining characterisation die!

Regards. David Martin."

One noticeable error of internal narrative ***CONTINUITY*** was that Merak's rad-check does not work when he is in K-Block - although Astra's does. Perhaps his needs renewing?

Another error is that the Doctor remarks he has "never seen him do that before" when K-9 spins round outside the Mentalis computer room. Dick Mills and others pointed out (too late to change the sequence) that he does this in THE PIRATE PLANET while the Doctor and Romana watch.

As a Time Lord, the Doctor can resist the Shadow's black-box control device. Presumably the Shadow is not too surprised by this and

ITV (LONDON region) **SATURDAY 24th FEBRUARY 1979**

5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00
POR T SWAP NEWS DATING KOJAK	HAPPY DAYS	C.H.I.Ps (U.S)	DICK TURPIN	CELEBRITY SQUARES	TV movie CRISIS AT SUN VALLEY				NEWS	Alan Bennett's HOW ALL DAY ON THE SANDS play		TO STAY ALIV

BBC 1

5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00
SPORT PINK PANTHER	NEWS JIM'LL FIX IT	DR. WHO Arm. (6)	film PONY EXPRESS				DICK EMERY SHOW	STARSKY & HUTCH (rpt)	NEWS	MATCH OF THE DAY		SATUR -DAY AT THE MILL

BBC 2

ONE MAN AND HIS DOG	MEN OF IDEAS	7 TO 1 BOB GELDOF	THE POL -ICE IN CONCERT	NEWS	AMERICAN ON SHORT STORY	THE REC-ORD	WHERE WE LIVE NOW (Doc)		STAN TRACEY ORIGINAL		film YOUNG BLOOD HAWKE	

has a fall-back plan since he has already tried the same trick on Drax and found it not to work. We know that the Shadow has also been observing the Doctor's "jackdaw meanderings" for some time - and knows that "there is a want of patience in your nature."

While constructing the fake segment of the Key to Time the Doctor wears an apron, which he removes when he returns from his workshop to the TARDIS Console Room. The fake chronodyne chip smokes and decays as it wears out.

When the Doctor meets Drax, Drax appears to recognise the Doctor by his nose. The Doctor, we learn, is *Theta Sigma* (a student designation, or his name?) from a Tech Course (the *Class of '92*).

When K-9 is turned on his side, he emits an alarm signal until righted. The sequences of K-9 for the regeneration sequence in LOGOPOLIS were taken from this story. Two sequences were used - a close-up of K-9 in the Atrian War Room from part two, and the sound from part five where K-9 refers to the Doctor as "Doctor" while under the Shadow's influence.

The Black Guardian's "Doctor you shall die for this" is also reused in the LOGOPOLIS regeneration.

Drax pronounces Gallifrey to rhyme with "free" ("Remember me to Gallifrey").

The TARDIS forcefield sound is the same as has been used before (for example, in THE THREE DOCTORS). It was originally created by Brian Hodgson.

The Guardians proved popular and returned in the twentieth season of **Doctor Who** in 1983. The Black Guardian appeared in MAWDRYN UNDEAD to control Turlough, and then again in TERMINUS to keep up the bad work. Both Guardians (played as in the Key to Time season by Cyril Luckham in White and Valentine Dyall in Black) appeared to fight it out in ENLIGHTENMANT.

Interesting ***TRIVIA*** includes the fact that the Atrian symbol - a stylised eagle, a remnant perhaps of the original storyline's equation of Atrios with the USA - its best-know departments, the Radiophonic Workshop, famous for providing Doctor Who with elaborate sound effects and music over the years, celebrated its 21st birthday in 1979. Alongside its own home-spun radio documentary **We Also Have Sound Houses**, members of the unit appeared on **Pebble Mill at One** in February. They demonstrated the production and addition of radiophonic sound to the scene in FACTOR where Shapp is shot by a Mute.

More high-profile, at least as far as the press was concerned, was the announcement of Mary Tamm's departure from Doctor Who. This was timed to coincide with the series' 500th episode - part one of THE ARMAGEDDON FACTOR. This triple-overlap ensured a mention for the show in most of the Saturday papers on January 20th. Even the *Financial Times* carried a small picture of Romana holding the Key to Time Tracer.

Two weeks later, on January 31st, Mary Tamm was a guest on **Pebble Mill at One**. She said she was leaving the series as a second year would be too boring. She wanted to return to her first love - the theatre.

News of Mary Tamm's departure also triggered the inevitable flurry amongst newspaper editors' speculation as to the identity of her successor. They did not have to wait long for an answer. On Tuesday 6th February, journalists were invited to a photo-call in London's Cadogan Square - where Romana II was unveiled in the shape of actress Lalla Ward. With three episodes of THE ARMAGEDDON FACTOR still to be broadcast, publicity handouts explained that Romana would regenerate into the form of Lalla Ward next season - thereby getting a 'promotion' from her current role as Princess Astra in the series.

The *Daily Mirror* published the inevitable headline in its pages the following morning above a photograph of Lalla Ward pulling the lightweight dummy K-9 along using one of the Doctor's scarves: *Doctor Who Girl Takes the Lead.* □

IN-VISION (ISSN 0953-3303) Issue 37, completed and first published APRIL 1992
COMMISSIONING AND CONTRIBUTING EDITORS: Justin Richards and Peter Anghelides
PUBLISHER: Jeremy Bentham
DISTRIBUTION ASSOCIATE: Bruce Campbell
CONTRIBUTORS TO THIS ISSUE: Bob Baker, Phil Bevan, John Bowman, Thelma Geddonfactor, Andrew Martin, Andrew Pixley, Martin Proctor, Mary Tamm, Raymond Twatt, Paul Vyse, Martin Wiggins
FORMAT BY: Justin Richards/Peter Anghelides, June 1986
DOCTOR WHO COPYRIGHT: BBC television 1977, 1992
PHOTO ORIGINATION: Vogue Typesetters
COLOUR: Banbury Repro
PRINTERS: Banbury Litho
EDITORIAL ADDRESS: Mill House, Aspley Court, Hill Farm, Nr Hatton, Warwick CV35 7EH UK
SUBSCRIPTIONS: 8 issues for £17 (add £2 for card envelopes) to: Jeremy Bentham, 13 Northfield Road, Borehamwood, Hertfordshire WD6 4AE UK

Context

CAST

THE DOCTOR Tom Baker
ROMANA Mary Tamm
K-9 John Leeson
'HEROINE' Susan Skipper (1)
'HERO' Ian Liston (1)
MERAK Ian Saynor (1-4,6)
SHAPP Davyd Harries (1-4,6)
PRINCESS ASTRA Lalla Ward
GUARDS John Cannon (1), Harry Fielder (2)
THE SHADOW William Squire (3-6)
TECHNICIAN Iain Armstrong (3)
PILOT Pat Gorman (3-4, 6)
DRAX Barry Jackson (5-6)
MUTE Stephen Calcutt (5-6)
THE GUARDIAN Valentine Dyall (6)

SMALL & NON-SPEAKING

VOICES Ian Liston (2)
TECHNICIANS (1-3) Peter Bithiel, Constance Carling, Garry Dean, Bill Hughes, David Wilde, Malcolm Ross
GUARDS (1-3) Peter Caton, Tony O'Leary, Reg Turner, Richard Sheekey, Peter Roy, Barry Summerford
PATIENTS (1) Albert Welch, Terry Ward, Ian Sheridan, Frank Arbisman, Barbara Hampshire, Juliet St.David
NURSES (1) Val McKinnon, Judy Roger
MUTES Ridgewell Hawkes (1-6), Danny Rae (3-4), James Haswell (3-4), Michael Braben (3-6), Derek Suthern (5-6)
EXTRAS Eddie Whiting (3-6), Michael Gordon-Brown (6)

CREW

SCRIPT EDITOR Anthony Read
PRODUCTION UNIT MANAGER John Nathan-Turner
DESIGNER Richard McManon-Smith
DESIGN ASSISTANT Sarah Parkinson
PROPERTIES BUYER Shirley Spriggs
COSTUME DESIGNER Michael Burdle
MAKE-UP ARTIST Ann Briggs
MAKE-UP ASSISTANTS Elizabeth Hardiman, Ann McEwan, Lesley Bond, Dorey Cilia
VISUAL EFFECTS DESIGNER John Horton
VISUAL EFFECTS ASSISTANTS Jim Francis, Steve Lucas
PRODUCTION ASSISTANT Ann Aronsohn
DIRECTOR'S ASSISTANT Sue Upton
ASSISTANT FLOOR MANAGERS Steve Goldie (studios 1-2), Rosemary Padvaiskas (studio 2 - ?could be 3)
FLOOR ASSISTANT Tony Bebbington
FILM EDITOR Richard Trevor
STUDIO LIGHTING Mike Jefferies
TECHNICAL MANAGER Tony Bate
STUDIO SOUND Richard Chubb
GRAMS OPERATOR Andy Hunter
SENIOR CAMERAMAN Alec Wheal (studios 1-2)
CREW 11 (studios 1-2)
SHOW WORKING SUPERVISORS Chick Hetherington (studio 1), Frank Sadler (studio 2), Frank Lowry (studio 3)
GRAPHICS Charles McGee
VISION MIXERS James Gould (studio 1), Graham Giles (studios 2-3)
ELECTRONIC EFFECTS Dave Chapman
VIDEOTAPE EDITOR Rod Waldron
SPECIAL SOUND Dick Mills
INCIDENTAL MUSIC Dudley Simpson
WRITERS Bob Baker and Dave Martin
DIRECTOR Michael Hayes
PRODUCER Graham Williams

TRANSMISSION

Part One: 21 January 1979, 18.25.06 (24'39")
Part Two: 27 January 1979, 18.27.10 (23'56")
Part Three: 3 February 1979, 18.28.03 (25' 03")
Part Four: 10 February 1979, 18.27.52 (25' 09")
Part Five: 17 February 1979, 18.26.13 (24'42")
Part Six: 24 February 1979, 18.29.40 (25' 09")

FILM

Each part: 35mm (stock titles): 30" (opening); 51" (closing - except part six: 1'07" closing)
Part One: 16mm silent effects: 25"
Part Two: 16mm silent effects: 40"
Part Three: 16mm silent effects: 25"
Part Four: 16mm silent effects: 30"
Part Five: None
Part Six: 16mm silent effects: 45"

FILMING

Effects footage only

RECORDING

Studio 1:
Outside Rehearsal: 27 October - 4 November 1978
5 November 1978: TC3 (11:00-13:00 Rehearse; 14:30-17:15 Rehearse/record: LDLA071P/1; 17:15-18:00 Rehearse; 19:30-22:00 Record: LDLA071P/2
6 November 1978: TC3 (10:30-13:00 Rehearse; 14:30-17:15 Rehearse/record:LDLA071P/3; 17:15-18:00 Rehearse; 19:30-22:00 Record: LDLA071P/4)
7 November 1978: TC3 (10:30-13:00 Rehearse; 14:30-17:15 Rehearse/record:LDLA071P/5; 17:15-18:00 Rehearse; 19:30-22:00 Record: LDLA071P/6)
Studio 2:
Outside Rehearsal: 8 November - 11 November 1978; 13 November - 18 November 1978
20 November 1978: TC3 (11:00-13:00 Rehearse; 14:30-17:15 Rehearse/record: LDLA071P/7; 17:15-18:00 Rehearse; 19:30-22:00 Record: LDLA071P/8
21November 1978: TC3 (10:30-13:00 Rehearse; 14:30-17:15 Rehearse/record:LDLA071P/9; 17:15-18:00 Rehearse; 19:30-22:00 Record: LDLA071P/10)
22 November 1978: TC3 (10:30-13:00 Rehearse; 14:30-17:15 Rehearse/record:LDLA071P/11; 17:15-18:00 Rehearse; 19:30-22:00 Record: LDLA071P/12)
Studio 3:
Outside Rehearsal: 23 November - 25 November 1978; 27 November - 2 December
3 December 1978: TC3 (11:00-13:00 Rehearse; 14:30-17:15 Rehearse/record: LDLA071P/13; 17:15-18:00 Rehearse; 19:30-22:00 Record: LDLA071P/14
4th December 1978: TC3 (11:00-12:00 Rehearse/record:LDLA071P/15;12:00-13:00 Rehearse; 14:30-17:15 Rehearse/record:LDLA071P/16; 17:15-18:00 Rehearse; 19:30-22:00 Record: LDLA071P/17)
5th December 1978: TC3 (11:00-12:00 Rehearse/record:LDLA071P/18;12:00-13:00 Rehearse; 14:30-17:15 Rehearse/record:LDLA071P/19; 17:15-18:00 Rehearse; 19:30-22:00 Record: LDLA071P/20)
Gallery session:
29 December 1978, TC6, on part 1's project number (11:00-22:00 Rehearse/record electronic effects)

SYPHER DUBS

Part One: 4 January 1979
Part Two: 20 January 1979
Part Three: 2 February 1979
Part Four: 1 February 1979 (no mistake)
Part Five: 14 February 1979
Part Six: 16 February 1979

PROJECT NUMBERS

Part One: 2348/2321
Part Two: 2348/2322
Part Three: 2348/2323
Part Four: 2348/2324
Part Five: 2348/2325
Part Six: 2348/2326

PROGRAMME NUMBERS

Part One:LDL/A071P/71
Part Two:LDL/A072J/71
Part Three:LDL/A073D/71
Part Four: LDL/A074X/71
Part Three:LDL/A075R/71
Part Four: LDL/A076K/71

MUSIC

Each part: Opening music (Ron Grainer) 30"; closing music (Ron Grainer) 53"
Part One: Incidental (Dudley Simpson) 5'??" Atrian National Anthem (Dudley Simpson) 1'?? "Movie" music (Dudley Simpson) 0'??"
Part Two: Incidental (Dudley Simpson) 7'44"
Part Three: Incidental (Dudley Simpson) 5'45" Atrian National Anthem (Dudley Simpson) 0'22"
Part Four: Incidental (Dudley Simpson) 7'30" Time Loop musical cue of 5", repeated 35 times (Dudley Simpson) 2'55"
Part Five: Incidental (Dudley Simpson) 6'55" Time Loop musical cue of 4", repeated 23 times (Dudley Simpson) 1'32" Repeated music from part four (Dudley Simpson) 0'10"
Part Six: Incidental (Dudley Simpson) 9'15"

REFERENCES

PERIODICALS

Daily Mirror (7 February 1979)
Radio Times (coveringn 21 Jan - 24 Feb 1979)
TARDIS 4-2, April 1979 (Graham Williams column)

LITERATURE

DICKS, Terrance - Doctor Who and the Armageddon Factor (Target, 1980)

FILMS

Close Encounters of the Third Kind (1977, directed by Steven Spelberg)

TELEVISION

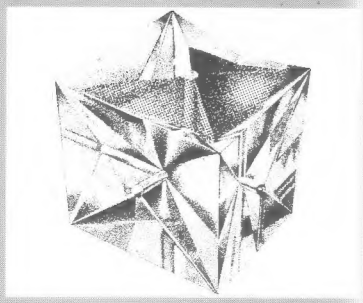
The Bionic Woman (MCA, 1976-8)
CHiPs (MGM1977-??)
Doctor Who (BBC, 1963-)
The Duchess of Duke Street (BBC 1976-8)
The Incredible Hulk (Universal, 1978-81)
The Life and Times of Grizzly Adams
Pebble Mill at One (BBC)
Scorpion Tales (ATV, 1979)
Target (BBC, 1977-8)

RADIO

The Man in Black (BBC)
We Also Have Sound Houses (BBC, 1979)

DOCTOR WHO

The Androids of Tara (5D)
The Armageddon Factor (5F)
Colony in Space (HHH)
Enlightenment (6H)
Genesis of the Daleks (4E)
The Horns of Nimon (5L)
The Invasion of Time (4Z)
Mawdryn Undead (6F)
The Pirate Planet (5B)
The Power of Kroll (5E)
The Ribos Operation (5A)
The Stones of Blood (5C)
The Talons of Weng-Chiang (4S)
Terminus (6G)
The Trial of a Time Lord (7A; 7B; 7C)
Underworld (4Y)



was picked up by the *Doctor Who Appreciation Society* as the symbol for their *Reference Department*. The symbol appears in many places - even the backs of the seats in the Marshal's flagship.

In the battle between the Zeon and Atrian fleets, six Atrian ships take on 20 Zeon ones (in five formations of four) - the Atrian's lose.

The war, we learn from Shapp, has been going on for nearly five years (however long an Atrian year may be). Both sides have (and use) disintegration capsules - which is why there are no prisoners ("death before dishonour").

According to Romana Transmat is "short for" *Partical Matter Transmitter*.

Episode four featured an uncharacteristic point-of-view shot of K-9 blasting directly at the camera.

The Doctor's device for tracing the distress call is a standard torch with a red cap over the end. It flashes as it picks up the signal.

Only Drax refers to the Mutes as "Mutes". It is unclear whether he calls them this because they are mutations, or because they cannot speak (although they do sometimes *hiss*).

It may be that the masks were designed without mouths *because* of the other inference of Mute as a name for the Shadow's mutated servants. We see when the Doctor and Drax are miniaturised that the Mutes appear to wear lace-up army-style boots.

The Shadow claims he has waited for the Key to Time "since Eternity began." Astra glows and changes into the final segment as she reaches out to touch the Tracer.

Had the Doctor let her touch the Key when in the TARDIS, then the story could have been over a couple of episodes sooner!

To re-disperse the Key to Time, the Doctor snaps the Tracer Core.

From the Key falling apart in the void, the image fades to Astra - who has recovered her circlet and original hairstyle. □